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THE SCHOOL JOURNAL

A Monthly Journal of Education

Vol. LXXVI. January, 1909 No. 5

OSSIAN LANG, Editor.

The New School Program

In organizing a course of study for a school system one chief consideration would appear to be this: What is the best equipment for life which can be given to a pupil in the time he is at school? Suppose we have him only one year, or two years, or three or four years.

Psychological and ethical dicta cannot help us much with this problem. Psychology has never been a safe adviser as regards the things that ought to be done educationally. Neither can ethics, as commonly understood, be trusted with the making up of a program. When we come to consider the question of individual limitations and possibilities and the question of methods, we shall turn to psychology for aid. When we want to discuss the spirit in which the work of the school is to be carried on, we shall call in the help of ethics. For the mapping out of a program of instruction for a common school, industrial and civic economics must be given a hearing.

To be sure the economic demands of to-day may not be exactly those of the time when our present a-b-c-darians will occupy the center of the stage. Nevertheless a broad interpretation of the demand from this direction will suggest many fairly definite inferences.

The logic of the literary programs of the past is well worth investigating in this connection. The underlying, tho un-admitted, idea seems to have been that the ultimate purpose of the schools is the production of individuals wise in book-lore, particularly clergymen, teachers, physicians and lawyers. The learned professions were the principal care. The *hoi polloi* had to get along as well as they could. Were they not sharing with the chosen few instruction in the rudiments of book-learning, more particularly reading and writing and arithmetic?

While the business of making doctors of all sorts was carried on, the children who would never pass beyond the primary school were supposed to be getting all they had a right to expect. The prevailing apprentice system, and the hard knocks of life generally were supposed to do the rest. The purpose of the school was not to prepare for the exigencies of the business of this world. That was a later thought. Every suggestion of a money value of the things taught at school was scorned as ignoble.

The original designers of the literary programs of the past no doubt interpreted aright the chief educational needs of their day. Instead of criticising them we had better examine whether we are doing for our generation of pupils as well as they did for theirs.

The primary school of our forefathers was designed to help bring up youth in the fear of God and teach them the mechanics of reading, speaking, writing, and ciphering. Then followed the classical school which emphasized the studies regarded as an essential preparation for the learned professions. Specialization was relegated to the university. Even here the specialization was gradual, permitting, in the beginning, of change from one professional department to another, without radical break.

Applying the logic of this organization of instruction to our day, we shall naturally come to a wholly different result. Preparation for the learned professions is probably the least of our troubles. This is attended to largely by the professions themselves. The plain individual—the child of "the common people" whom, President Lincoln said, God must be particularly fond of because He made so many of them—has developed into the chief problem of educational sociology. In a democracy such as ours the common people are the only ones worth considering, for these are all there are. Reading, writing, arithmetic and various forms of expression continue to be regarded as "essentials," tho for reasons somewhat different from those honored in the past. The "ignoble" practical demands of life have risen to supremacy. Forms of expression which the past excluded from the scope of the school are considered worthy of educational encouragement. Phases of manual and industrial instruction have found their way into the school curriculum. Agricultural and domestic occupations are no longer pedagogically *tref* or unclean.

It is quite natural that tradition should fight every attempt to release its hold. Habit is strong. Besides, the literary program of the past cost less. Industrial instruction demands equipment. That is why the modernization of the school curriculum proceeds slowly and does not appeal to every community. Nevertheless, there is steady progress all along the line.

Several of the localities in which manual dexterity and industrial efficiency are accorded recognition beside literary ability have had the courage to carry the idea beyond the elementary schools. There are high schools in which young people are given an opportunity to acquire skill and taste in various forms of industrial art.

Establishment of public trade schools is the step that is to be taken next. They will naturally be part of the common school system. We are preparing the young for literary pursuits at public expense. Many schools have added commercial departments and instruction in the household arts. Several states maintain schools of agriculture and schools of mining. Trade instruction is logically derived from the principle which placed the schools of the past in the service of the learned professions.

In making provision for the teaching of trades the general educational purposes of the schools need not be sacrificed in the least. The plan would be about as follows: From the kindergarten up thru the primary school, manual activities and industrial occupations are carried on in which all

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Class in Basketry and Raffia

Summer Session of the State Normal School, at Johnson, Vermont.
Edward D. Collins, Ph.D. (Yale 1899), Principal

children join. After that, the choice and bend of the individual pupils are afforded opportunity to assert themselves. Election comes in gradually. At the age of, say, fourteen or fifteen, trade specialization may begin; of course only in departments requiring no more educational maturity than the pupils possess at that time. Trades demanding a higher degree of preparation are reserved for the high school. The literary college at the top will have its counterpart in the school of technology which may be carried as high as local financial ability and enterprise will permit. The county and the state step in where the community is unable to proceed. This is a rough outline of what I believe to be the proper basis for the working out of a public system of industrial instruction. The common school is by its very nature pledged to provide the fullest possible equalization of educational opportunity. The school of the past confined itself too closely to the needs of the "learned" trades. The present demands a more equitable program.

The President Endorses the Bureau

President Roosevelt paid a high tribute to U. S. Commissioner Elmer Ellsworth Brown when he included, in his "last" Message to Congress, strong recommendations urging enlarged appropriations for the Bureau of Education. This is the first time that a President has publicly expressed his confidence in the ability of the Commissioner of Education to administer large funds in a manner that will benefit the whole country. Now there is hope that Congress will act. The niggardliness with which the Bureau has been treated in the past has been not to our credit in the eyes of other nations.

President Roosevelt writes:

> The share that the National Government should take in the broad work of education has not received the attention and the care it rightly deserves. The immediate responsibility for the support and improvement of our educational systems and institutions rests and should always rest with the people of the several States acting thru their State and local governments, but the Nation has an opportunity in educational work which must not be lost and a duty which should no longer be neglected.
>
> The National Bureau of Education was established more than forty years ago. Its purpose is to collect and diffuse such information "as shall aid the people of the United States in the establishment and maintenance of efficient school systems and otherwise promote the cause of education thruout the country." This purpose in no way conflicts with the educational work of the States, but may be made of great advantage to the States by giving them the fullest, most accurate, and hence the most helpful information and suggestion regarding the best educational systems. The Nation, thru its broader field of activities, its wider opportunity for obtaining information from all the States and from foreign countries, is able to do that which not even the richest States can do, and with the distinct additional advantage that the information thus obtained is used for the immediate benefit of all our people.
>
> With the limited means hitherto provided the Bureau of Education has rendered efficient service, but the Congress has neglected to adequately supply the bureau with means to meet the educational growth of the country. The appropriations for the general work of the bureau, outside education in Alaska, for the year 1909 are but $87,500—an amount less than they were ten years ago, and some of the important items in these appropriations are less than they were thirty years ago. It is an inexcusable waste of public money to appropriate an amount which is so inadequate as to make it impossible properly to do the work authorized, and it is unfair to the great educational interests of the country to deprive them of the value of the results which can be obtained by proper appropriations.
>
> I earnestly recommend that this unfortunate state of affairs as regards the National education office be remedied by adequate appropriations.

There was an educational exhibit at the World's Fair at St. Louis which illustrated graphically the development of schools from savage and semi-civilized society up thru the training given in the temples of Egypt, the academies of Greece, the court of Charlemagne and the monasteries of mediæval times, to the modern age. Two of these illustrations are reproduced in the present number of THE SCHOOL JOURNAL, thru the kindness of Miss Marie R. Garesche, who directed the poses. The photographs furnish the suggestion for a beautiful book on the history of educational progress. Miss Garesche is teacher of art in the Central high school at St. Louis.

The pictures mentioned here will be found on page 182.

Fire Protection for Schools

By PETER JOSEPH MCKEON, Secretary of The Fire Bureau, New York

Construction for Fire Safety*

Any proposals looking to safety against fire in school-building construction must expect objections on the ground of cost. Few towns or cities have the wealth to erect the more costly "fireproof" structures, nor are they called on by increasing demand for educational facilities to put up many new buildings, thereby offering the chance of providing better structures. For various reasons, therefore, it is to be expected that frame or ordinary brick buildings will continue to be the most numerous type of school building, and it is for such buildings that fire recommendations are most needed. At the outset, it must be emphasized that the plan of the building and the construction of the vertical openings are more important than the type of structure or the choice of materials. These two factors affect the safety of the lives of the occupants very decidedly, and this is more important than the destruction of the building.

THE PLAN

In the planning of a school building as distinct from its architectural design or type of construction, fire safety suggests some modifications. That buildings be low is a fundamental recommendation; school buildings should never be more than six stories high and preferably should be limited to three or four stories. Small buildings, that is, a reduced area for each building or section of a building, is also a fundamental principle. Five thousand square feet as the maximum for any building is the judgment of scientific firemen like the late Chiefs Bonner and Kruger, of New York. This limitation is meant for unbroken areas such as would be open to one fire. The use of fire walls with protected openings, or partitions equal to fire walls, reduces areas to meet sound fire protection requirements and provides virtually separate and distinct buildings.

The location of exits should aim to eliminate or reduce horizontal distances from assembly or recitation rooms to stairways, and from stairways to the outer spaces of safety. Stairways should be placed close to the outside walls, and if possible towards the corners of the building; they should be planned so that the lines of pupils will diverge rather than converge; the terminals of the stairs at the street levels should be virtually outside the building proper, that is, close to streets or other open spaces in order to obviate passing thru halls, corridors or vestibules before reaching the safety of the open air.

Basements or cellars as well-known fire breeders would not be found in buildings designed for the highest degree of fire safety. A more moderate and entirely practicable and necessary requirement is the complete isolation of the basement from the rest of the building. The first floor should be solid and without openings of any kind. Necessary stairways to the basement should be placed outside the building walls; such shafts or openings as cannot be dispensed with should be rigidly cut off, that is, enclosed with incombustible materials and the doors or windows protected with automatic doors or traps having fusible link catches.

The first floor construction should be of "fireproof" construction to some extent, no matter what the rest of the building is. For frame or wood buildings it should be a plank floor, or if wood beams are used these should be filled in with some form of concrete or fire blocks. Ceiling the beams with metal or other covering is good only as a makeshift, as it makes a hollow space in which fire may start or spread without discovery. For brick buildings, some form of incombustible construction should be used; the additional cost should be a concession to secure greater safety, and if necessary obtained by economizing in other directions. No single requirement, save perhaps protected stairways, equals isolating the basement in a fireproof manner. For "fireproof" buildings a word of warning is necessary; don't have unprotected unenclosed vertical shafts, such as stairways, elevators, pipe channels, chutes, or shafts for light or ventilation. This is a radical defect and reduces the value of "fireproof" construction almost seventy-five per cent and makes the building little better than one of ordinary construction.

CONSTRUCTION AND MATERIALS

It may seem useless to suggest fire protection measures for wood or frame buildings, but burnable as these buildings are they can still be made sufficiently fire-resistant to safeguard the lives of the occupants. This can be accomplished by fireproofing the stairway exits. Make them enclosed and stopped off shafts, preferably of incombustible materials, such as brick, tile, concrete, metal, lath and plaster and wire glass. Such a precaution is just as sensible and expedient as making chimneys of brick. Even if incombustible materials cannot be used, there is no excuse for unenclosed stairways intended as exits in case of fire. Metal-clad wood, plank partitions of two or three-inch stuff or even the ordinary seven-eighths-inch board enclosure, is better than no protection at all, as the lightest type will hold back fire for several minutes. If these lighter forms of stairway protection are provided with self-closing doors having fusible link catches, they will make a protected exit and allow the occupants to leave the building in good order.

In frame buildings, or all buildings for that matter, good brick chimneys are a fire protection asset; so is plank or mill construction, which means the avoidance of hollow spaces in the walls and ceilings. Partitions, too, planned as fire stops, increase the fire resistance of frame buildings and their construction should meet the specifications previously described for stairway enclosures. All that applies to frame-building construction holds equally true for ordinary brick buildings. Excepting the exterior walls, frame and brick buildings are practically identical in construction. As far as protection to life and property against fire is concerned, the brick building offers little more than the frame building; if its interior construction is faulty, fire will spread in a brick building practically as fast as in a frame building.

For most school buildings a floor construction of wood beams is probably a condition, not a theory. The practical necessities of this condition must be

*Copyright, 1908, by The Fire Bureau.

met and the thing to do is to secure what improvement is possible, that is, increase the fire resistance of this form of floor construction. Something is gained by filling in between the beams with concrete or fire blocks, or ceiling the floors with metal lath and plaster in preference to wood lath and plaster or boards. Such a protection to wood beams provides a good check to fire burning directly thru the floors. This improvement should be accompanied by another very necessary precaution, namely, avoiding hollow spaces at the walls, such as is made by furring or studded off construction, and of course the feature first mentioned, enclosing all openings thru the building as previously described.

The foregoing suggestions for increased fire safety in wood and brick buildings is a concession to actual conditions, since incombustible construction, however desirable, is simply not obtainable in many villages, towns and cities. Even where the money is available, it will take years to replace the present buildings. The active and widespread agitation for fireproof construction makes it unnecessary to say anything here to advance it. What is needed, indeed, is a note of warning in regard to such structures; don't have unenclosed stairways and other vertical shafts. Don't, because of the use of incombustible materials, neglect the prevention of fire or proper measure to discover and extinguish fire promptly. Remember that fireproof construction does not remove the necessity for other measures; it is simply one step towards greater safety; it is not a complete solution of the fire problem.

Memory Gems for January

(Saturdays and Sundays omitted)

JANUARY 1

The best things are nearest: light in your eyes, flowers at your feet, duties at your hand, the path of God just before you. Then do not grasp at the stars, but do life's common work as it comes, certain that daily duties and daily bread are the sweetest things of life.

JANUARY 4

Whatever you may be sure of, be sure of this: that you are dreadfully like other people.

—JAMES RUSSELL LOWELL.

JANUARY 5

Have the courage to be ignorant of a great number of things in order to avoid the calamity of being ignorant of everything.

—SYDNEY SMITH.

JANUARY 6

We drop a big job for a little one when we neglect ourselves to reform others.

JANUARY 7

Pay as little attention to discouragements as possible. Plow ahead as a steamer does, rough or smooth—rain or shine. To carry your cargo, make your port, is the point.

—MALTBIE DAVENPORT BABCOCK.

JANUARY 8

The common problem, yours, mine, every one's,
Is—not to fancy what were fair in life,
Provided it could be—but finding first
What may be, then how to make it fair
Up to our means: A very different thing.

—ROBERT BROWNING.

JANUARY 11

If your name is to live at all, it is so much more to have it live in people's hearts than only in their brains.

—OLIVER WENDELL HOLMES.

JANUARY 12

To make some nook of God's a little fruitfuller, better; to make some human hearts a little wiser, manfuller, happier, more blessed, less accursed! It is work for a God.

—CARLYLE.

JANUARY 13

Ask advice from friends, pity from women, charity from strangers, and from your relatives—nothing.

—SPANISH PROVERB.

JANUARY 14

Popularity is the result of being able to mix in the affairs of other people without seeming to be meddlesome.

JANUARY 15

Atlas could never have carried the world had he fixed his thought on the size of it.

JANUARY 18

There is no beautifier of complexion, or form, or behavior, like the wish to scatter joy and not pain around us.

JANUARY 19

He who labors diligently need never despair; for all things are accomplished by diligence and labor.

—MENANDER.

JANUARY 20

The only way to have a friend is to be one.

—EMERSON.

JANUARY 21

Be not merely good; be good for something.

—THOREAU.

JANUARY 22

Originality is simply a pair of fresh eyes.

—THOMAS WENTWORTH HIGGINSON.

JANUARY 25

Habit is a cable. We weave a thread of it every day, and at last we cannot break it.

—HORACE MANN.

JANUARY 26

It is not how much we have, but how much we enjoy, that makes happiness.

—SPURGEON.

JANUARY 27

A kind heart is a fountain of gladness, making everything in its vicinity to freshen into smiles.

—WASHINGTON IRVING.

JANUARY 28

Men give me credit for genius. All the genius I have lies just in this: When I have a subject in hand, I study it profoundly. Day and night it is before me. I explore it in all its bearings. My mind becomes pervaded with it. Then the effort which I make the people are pleased to call the fruit of genius. It is the fruit of labor and thought.

—ALEXANDER HAMILTON.

JANUARY 29

Do little things now; so shall big things come to thee by and by asking to be done.

—PERSIAN PROVERB.

Reading Course for the Well-Read Teacher

Designed for Leisurely Reading from One's Own Books

By MAUD ELMER KINGSLEY, Maine

That the eighteenth century philosopher would have approved of the use made of his knowledge is hardly to be denied by anyone familiar with his attitude toward good workmanship. A cardinal defect in American character is the traditional lack of respect for the productive side of industry. In spite of encomiums on the dignity of labor capable young men and young women are more anxious to learn to sell goods effectively than to make them thoroughly. Every such institution as the Franklin Union, which insists upon doing well the simple fundamental operations that are at the base of all the industries, is assisting to restore the normal balance between production and distribution.

An instructor, in whatever grade he may be teaching, must have a speaking acquaintance with certain literary productions, since such an acquaintance is the unmistakable hall-mark of the well-read man or woman.

It is the purpose of the accompanying outline to present a course of reading composed of these productions and arranged in such a manner as to show the origin, development, and growth of metrical and prose fiction—that department of literature which preserves for succeeding generations the manners and customs of preceding ages, and thus enables the reader to trace the progress of civilization thru the centuries.

Everyone of the books mentioned in this list is easily obtainable, and the price of none exceeds one dollar and fifty cents, while many of them are to be found, attractively bound and printed, for fifty cents each. Thus a library of enormous possibilities for life-long profit and pleasure may be collected at trifling cost.

(The titles marked with an asterisk are of books which may be bought, as described above, for fifty cents or less.)

Class I.—Myths, Legends and Pupular Tales

I. THE GREEK MYTHS

1. Guerber's "Myths of Greece and Rome."
2. Hawthorne's "Wonder Book" and "Tanglewood Tales."*
3. The Trojan Cycle of Myths.
   a. Homer's "Iliad," translated by Pope. (Read Books i, vi, ix, xvi, xxiv).*
   b. Virgil's "Æneid," translated by Conington. (Read Books i.—iv. and xii.)
   c. Homer's "Odyssey," translated by Bryant. (Read Books vi. and ix.)

II. THE MYTHS OF THE NORTH

1. The "Niebelungen-Lied."
   a. The "Wagner Story Book."
2. Fouqué's "Undine."*

III. THE MYTHS OF BRITAIN

1. The King Arthur Cycle.
   a. Malory's "Morte d'Arthure." (Read Books 1, 2, 7, 8, 11, 18, 20, 21.)
   b. The "Mabinogion,"—Welsh tales translated by Lady Charlotte Guest.*
   c. Tenfiyson's "Idyls of the King."*

IV. THE PERSIAN MYTH OF THE HERO RUSTUM

1. Matthew Arnold's "Sohrab and Rustum."*—(A fragment of the legend, written in Epic form and displaying Oriental imagery.)

V. MYTHS OF THE NORTH AMERICAN INDIAN

1. Longfellow's "Hiawatha."*

VI. TALES COMMON TO ALL PEOPLES

1. Familiar Fairy Tales. (Collected by Andrew Lang.)*
2. Folk-Lore Stories.
   a. Dasent's "Norse Tales."
   b. Grimm's "Household Tales." (Bohn's Edition.)
   c. Andersen's "Danish Legends."*
3. Apologues.
   a. "Gesta Romanorum," Bohn's Edition. (Read chapters 106, 107, 118, 108, 40, 60, 80, 104, 105.)
   b. "Beast Tales." (In which animals speak and act as human beings.)
      (1) Æsop's "Fables."*
      (2) Kipling's "First and Second Jungle Books."
      (3) Harris's "Uncle Remus Stories."

NOTE: "Uncle Remus" is in no sense an apologue; but comes under the head of Beast Tales and is a classic.

Class II.—Ballads

These are short tales in verse of some valorous exploit or of some tragic and pathetic story. By their simple, often rude style, ballads appealed to a class of readers which other forms of literature could not reach.

I. ORIGINAL BALLADS

1. Percy's "Reliques of Ancient English Poetry."* (Read "The Birth of Robin Hood," "Robin Hood and the Monk," "Robin Hood and Guy of Gisborne," "Chevy Chase," "The Nut Brown Maid," "The Children in the Wood," "The Friar of Orders Gray."

II. IMITATION BALLADS

1. Coleridge's "Ancient Mariner."*
2. Macaulay's "Horatius at the Bridge."*
3. Cowper's "John Gilpin." (Satirical.)
4. Keats' "Eve of St. Agnes."*

Class III.—Collections of Tales Supposed to be Related on Some Especial Occasion

I. MEDIAEVAL COLLECTIONS

1. "The Arabian Nights."
2. Chaucer's "Canterbury Tales." (Read the Knight's Tale, the Cook's Tale, and the Clerk's Tale.)
   a. Collateral Reading.—Dryden's "Palamon and Arcite."*

II. MODERN COLLECTIONS

1. Moore's "Lalla Rookh."*
2. Longfellow's "Tales of a Wayside Inn."*
3. Whittier's "Tent on the Beach."*

(To be continued next month)

Grammar School Course in Literature

By HARRIET E. PEET, State Normal School, Salem, Mass.

The Study of a Short Poem.—I.

Dante Gabriel Rossetti speaks of the sonnet as "a moment's monument to one dead, deathless hour,—a memorial from the Soul's eternity." The same can be said of any great short poem. It is the expression of a mood in which all the senses are so wrapt in one thought that the whole being is satisfied. The soul, in such an experience, feels itself as a part of a greater whole in which there is unity, completeness and perfection.

A lyric, when it comes to us as such an æsthetic experience, is like a strain of music; it expresses far more than it seems to say. This is its value to the children. It helps them to forget sordid surroundings and petty interests. It carries them into a world of great thoughts or playful fancies and makes them feel themselves a part of forces that are refining and ennobling.

The method of the short poem is often that of Tennyson's "Bugle Song." Things of beauty are first called to mind and then a truth or a thought is developed. In the "Bugle Song" the things of beauty are the sunset over the mountain and lake, the castle, the bugle call and its echo "from cliff and scar." The spiritual application is that infinitely beautiful idea that our thoughts and acts (spiritual echoes) "roll from soul to soul, and grow forever and forever."

If the idea of arousing the emotions is kept in mind as the end of the work with a lyric, it will be taught as a pleasurable experience. A teacher will try to have her pupils vizualize the pictures suggested, feel the rhythm of the poem, and grasp its mood and thought. She will know that she has been successful if she has aroused the imagination of the children, stirred their emotions, and made the pupils feel an added sense of the dignity and nobility of life.

To accomplish these ends a teacher must interest her class in a poem before studying it. She will give the general outlook and feeling of the poem before calling the attention to unimportant details. She will see that the ideas in the poem are grasped and then that the mode of expression required from the children is such as spontaneously develops from the stimulation which the poem has given. Such work in a single selection falls naturally into three parts: an introduction to a poem; a study of the text; an expression in reading, memorizing, composition or drawing.

Even the study of so short a poem as Ariel's Song from "The Tempest" would follow this order of introduction, study of text, and expression. Before beginning the work the teacher should, of course, appreciate the daintiness of this Elizabethan lyric. It is elf-like, merry and full of pretty conceits. Ariel is an elemental spirit like fire, air or water, "flaming amazement on the ship masts," playing the part of a Will-o'-the-Wisp or doing Prospero's bidding in the shape of a sea-nymph. Like an element, he longs for freedom. The introduction to the poem might consist of the story of how Prospero freed Ariel from a cloven pine (The Tempest, Act I., Scene II.), or it might be similar to the following one:

ARIEL'S SONG

Introduction.—Sometimes on a warm summer day when we are walking in a garden we may hear a buzzing in a sweet-smelling flower. If we turn to look we may find a burly old bumblebee after honey. Ariel's song tells of something else that is supposed to live in flowers. It has gauzy wings like a bumblebee and sometimes steals into a flower for honey and to hide. Sometimes it comes out and joins the King and Queen and dances in a magic circle by the light of the moon.

Where the bee sucks, there suck I;
In a cowslip's bell I lie;
There I couch, when owls do cry;
On the bat's back I do fly
After summer merrily.
Merrily, merrily, shall I live now,
Under the blossom that hangs on the bough!

Study of Text.—What makes the poem of interest? What kind of a sprite is the fairy? What shows that he is tiny? What shows that he is a merry fellow? Of what is he sometimes afraid? Where does the fairy sleep? What does he eat? How does he sometimes travel?

What kind of pictures are suggested by the song? What does the sound (meter) of the poem suggest? What is the spirit of the poem? What characteristics make the poem enjoyable?

Forms of Expression.—(1) Oral work: Topical recitations on Ariel and the Fairy Folk. (2) Written composition: An Imaginary Encounter with a Fairy; The Story of Ariel; A Description of Ariel's Song. (3) Reading. (4) Memorizing. (5) Singing. (6) Painting in water-color, "The Fairy's Hiding Place."

Oral compositions (topical recitations) should follow a question and answer exercise; the written work should be slightly more elaborate than the oral work. The reading and memorizing should follow the study so as to be an expression of thought and feeling. These should be done so as to suggest the daintiness and merriment of Ariel.

Most lyrics call for a treatment similar to this of Ariel's Song. The introduction should be brief and entertaining, so that the children are put in a state of expectancy. The questions asked in going over the text may sometimes be thought out and asked by the children and sometimes by the teacher. They should awaken lively imagery and associations, and be inclusive, pointed and of value. They should lead to thought. Those that give an inkling as to the answer, or those that can be answered by yes or no, get the children into the habit of guessing, and are consequently to be avoided. Several topics for the oral and written work should be suggested in order to give the different children an opportunity for choice.

WINTER—BY WILLIAM SHAKESPEARE

Introduction.—In olden times, what a busy life the people lived at the great old farm house! Toward twilight milkmaids were in the pasture milking the cows. Shepherds were bringing their sheep home for the night. Men were hauling logs and were busy with the cattle. In the old-fashioned kitchen great logs were burning in the fireplace and a kitchen maid was skimming a pot hung on a crane above the fire. A punch bowl stood on the table with a dish of crab-apples near it. This was out to add festivity for the evening, when all hands were in from their labor.

On Sunday the same household went to the village church to hear wise sayings from the minister. In summer, life about the farm went merrily. How it went in winter is told in this poem:

When icicles hang by the wall
And Dick the shepherd blows his nail,
And Tom bears logs into the hall,
And milk comes frozen home in pail;
When blood is nipt, and ways be foul,
Then nightly sings the staring owl
Tu-whit!
To-who! A merry note!
While greasy Joan doth keel* the pot.

When all about the wind doth blow,
And coughing drowns the parson's saw,
And birds sit brooding in the snow,
And Marian's nose looks red and raw;
When roasted crabs† hiss in the bowl,
Then nightly sings the staring owl
Tu-whit!
To-who! A merry note!
While greasy Joan doth keel the pot.

—W. SHAKESPEARE.

Study of Text.—What things in the poem show that it is a cold winter day? What indicates that the people mentioned are connected with a country home? What other expressions may be substituted for "when ways be foul," "blows his nail," "keel the pot"? Where do you imagine Tom is? What is Joan's appearance? How do you picture Marion? What makes the Parson's sermon hard to listen to? Where do you imagine the owl is stationed?

What makes the poem seem like a description of real things? What gives an impression of coldness? What things give an idea of discomfort? What gives an idea of good cheer? What things make you smile? Why is the owl mentioned in the poem? What are your favorite lines? What characteristics has the poem which make it a good poem?

Forms of Expression.—(1) Oral compositions following the questions and answers: An interpretation of the poem, stanza by stanza. (2) Winter compositions; An Old-time Farm in Winter; The Poem "Winter"; Changing Seasons on the Farm. (3) Reading. (4) Memorizing.

A lyric meant to be sung is often in the form of an exclamation. The "Spring Lilt," for example, is of this order:

Thru the silver mist
Of the blossom-spray
Trill the orioles: list
To their joyous lay!

"What in all the world, in all the world," they say,
"Is half so sweet, so sweet, is half so sweet as May?"

"June! June! June!"
Low croon
The brown bees in the clover.
"Sweet! sweet! sweet!"
Repeat
The robins, nested over.

—UNKNOWN.

*Keel: skim.
†Crabs: crab-apples.

A song lyric may be studied by children. Descriptive lyrics such as "L'Allegro" and "Il Penseroso" are seldom adapted to pupils in the grammar school. There is, however, at least one descriptive lyric which has such an echo of "far-off things" and such simplicity that it is irresistible. Wordsworth's "Highland Reaper," a reminiscence of his trip to the Scottish Highlands, has both charm and picturesqueness.

"TO A HIGHLAND REAPER"

Introduction.—There is a poem which suggests more than the words seem to say. The story of the poem is very simple. A poet, while in the Scottish Highlands, hears something that is extremely beautiful to him. It is a song which comes from a Highland lass, who, alone in a field, is bending over the grain and singing. Her song seems to fill all the valley with its melancholy strain.

Behold her, single in the field,
Yon solitary Highland Lass!
Reaping and singing by herself;
Stop here, or gently pass!
Alone she cuts and binds the grain,
And sings a melancholy strain;
O listen! for the vale profound
Is overflowing with the sound.

No nightingale did ever chaunt
More welcome notes to weary bands
Of travellers in some shady haunt,
Among Arabian sands:
A voice so thrilling ne'er was heard
In spring-time from the cuckoo-bird,
Breaking the silence of the seas
Among the farthest Hebrides.

Will no one tell me what she sings?
Perhaps the plaintive numbers flow
For old, unhappy, far-off things,
And battles long ago:
Or is it some more humble lay,
Familiar matter of to-day?
Some natural sorrow, loss, or pain,
That has been, and may be again!

Whate'er the theme, the maiden sang
As if her song could have no ending;
I saw her singing at her work,
And o'er the sickle bending;—
I listen'd, motionless and still;
And, as I mounted up the hill,
The music in my heart I bore
Long after it was heard no more.

Study of Text.—What gives a feeling of loneliness to the scene? How sweet was the song? What did the poet imagine the song might be? What impression was left with the poet?

At what time of day do you picture the scene suggested by the poem? How does the air feel? What probably surrounded the valley? What was the maiden doing? How do you imagine she was dressed? Why was the song beautiful? What scenes are suggested by the words, "old, unhappy, far-off things, and battles long ago," "some natural sorrow, loss or pain."

Forms of Expression.—(1) Oral compositions: The Scene of the Poem; The Maiden's Song; (2) Reading.

Scenes from the Talisman. II

Worked out by Seventh Grade pupils of the Francis W. Parker School, Chicago, under the direction of Miss Mabel Elizabeth Dryer, and Miss Margaret Persis Brown. Continued from the December SCHOOL JOURNAL.

Scene II

Interior of Richard's tent, Palestine. King Richard and De Vaux sleeping. Slow, armed tread is heard approaching tent. De Vaux wakes.

De Vaux.—Who comes? (Knight of Leopard enters.) Whence this bold intrusion?

Richard (wakes).—Hold, De Vaux, Sir Kenneth cometh like a good soldier to render account of his guard. To such the general's tent is ever accessible. Speak, Sir Scot—thou com'st to tell of a valiant, safe, and honorable watch, dost thou not? The rustling of the folds of the banner of England were enough to guard it, even without the body of such a knight as men hold thee.

Sir Kenneth.—As men will hold me no more. My watch hath neither been vigilant, safe nor honorable. The banner of England has been carried off.

King Richard.—And thou alive to tell it? Away, it cannot be. There is not even a scratch on thy face. Why dost thou stand thus mute? Speak the truth. It is ill jesting with the king. Yet I will forgive thee if thou hast lied.

Sir Kenneth.—Lied! Sir King! but this also must be endured—I have spoken the truth.

King Richard.—By God and by St. George! De Vaux, go view the spot—this fever has disturbed his brain—this cannot be—the man's courage is proof—it cannot be. Go speedily—or send if thou will not go.

Enter Neville hastily.

Neville (excitedly).—The banner of England is gone and the knight who guarded it has been overpowered and probably murdered. (Sees Sir Kenneth.) But whom do I see here?

King Richard.—A traitor. (Takes his battle-axe.) A traitor whom thou shalt see die a traitor's death. (Draws back weapon as if to strike, pauses a moment, then lets his weapon fall to the ground.) But there was blood, Neville—there was blood upon the place! Hark thee! Sir Scot—brave thou wert once, for I have seen thee fight. Say thou hast slain two of the thieves, in the defense of the standard—say but one—say thou hast struck but a good blow in our behalf, and get thee out of the camp with thy life and thy infamy!

Sir Kenneth.—You have called me a liar, my Lord King, and therein, at least, you have done me wrong. Know that there was no blood shed in the defense of the standard.

King Richard.—Now by St. George! (Heaves his arm as if to strike.)

De Vaux (Places himself between the king and Sir Kenneth).—My liege, this must not be here, nor by thine own hand. It is enough of folly for one night and day to have intrusted thy banner to a Scot. Said I not they were ever fair and false?

King Richard.—Thou didst, De Vaux, and thou wast right. I should have known him better. And yet it is strange to see the bearing of the man. Coward or traitor he must be, yet he abode the blow of Richard Plantagenet, as our arm had been raised to lay knighthood on his shoulder. Had he shown the slightest sign of fear—had but a joint trembled, or an eyelid quivered—I had shattered his head like a crystal goblet. But I cannot strike where there is neither fear nor resistance.

Sir Kenneth—My lord——

King Richard.—Ha! hast thou found thy speech? Ask grace from heaven but none from me, for England is dishonored through thy fault; and wert thou my own brother there is no pardon for thee.

Noise heard from without. Guard enters and announces the queen.

King Richard.—Detain her—detain her, Neville, this is no sight for women. Away with him, De Vaux, thru the back entrance of our tent; coop him up, and answer for his safe custody with your life. And hark ye—he is presently to die—but let him have a ghostly father—we would not kill soul and body. And stay—hark thee, we will not have him dishonored; he shall die knightlike, in his belt and spurs; for if his treachery be as black as hell, his boldness may match that of the devil himself. And send me the executioner speedily.

Commotion in outer pavilion.

Voice of Queen.—I knew it—the king will not receive us.

Executioner enters.

King Richard.—Sir Kenneth of Scotland is to die shortly. And hark thee, villain, observe if his cheek loses color or his eye falters. Mark me the smallest twitch of the features, or wink of the eyelid. I love to know how brave souls meet death.

Executioner.—If he sees my blade waved aloft without shrinking, he is the first that ever did so.

Voice of Edith.—If your grace make not your own way, I make it for you; or if not for your majesty, for myself at least. Chamberlains, the queen demands to see King Richard—the wife to see her husband.

Chamberlain.—It grieves me to gainsay you; but his Majesty is busied upon matters of life and death.

Edith.—And we seek also to speak with him on matters of life and death—I will make entrance for your grace.

Puts aside the curtain. Ladies enter.

King Richard (Displeased).—What means this, Berengaria?

Queen.—Send away that man; his look kills me.

King Richard.—Begone, sirrah—what wait'st thou for? Art thou fit to look on these ladies?

Executioner.—Your highness's pleasure touching the head.

King Richard.—Out with thee, dog! A Christian burial. (Exit executioner.) And now, foolish wench, what wishest thou? (Queen kneels before him.) What seeks the lady of my heart in her knight's pavilion in this early and unwonted hour?

Queen.—Pardon, my most gracious liege—pardon.

King Richard.—Pardon! for what?

Queen.—First, for entering your royal presence too boldly and unadvisedly.

King Richard.—Thou too boldly? The sun might as well ask pardon because his rays entered the windows of some wretch's dungeon. But I was busied with work unfit for thee to witness, my gentle one, and I was unwilling besides that thou shouldst risk thy precious health where sickness has been so lately rife.

Queen.—But thou art well now.

King Richard.—Well enough to break a lance on the bold crest of that champion who refuses to acknowledge thee the fairest dame in Christendom.

Queen.—Thou wilt not then refuse me one boon —only one—only a poor life.

King Richard.—Ha! Proceed.

Queen.—This unhappy Scottish knight——

King Richard.—Speak not of him, madam, he dies—his doom is fixed.

Queen.—Nay, my royal liege, 'tis but a silken banner neglected—Berengaria will give thee another, broidered with her own hand, and rich as ever dallied with the wind. Every pearl I have shall go to bedeck it, and with every pearl I will drop a tear of thankfulness to my generous knight.

King Richard.—Thou knowest not what thou sayest—pearls!—can all the pearls of the East atone for a speck upon England's honor—all the tears that ever woman's eye wept wash away a stain on Richard's fame? Go to, madam, know your place, and your time, and your sphere. At present we have duties in which you cannot be our partner.

Queen (to Edith).—Thou hear'st, Edith, we shall but cense him.

Edith.—Be it so. (Steps forward.) My lord —I, your poor kinswoman, crave you for justice rather than mercy. And to the cry of justice the ears of a monarch should be open at every time, place, and circumstance.

King Richard.—Ha! our cousin Edith? She speaks ever kinglike, and kinglike will I answer her, so she bring no request unworthy of herself or me.

Edith.—My lord, this good knight, whose blood you are about to spill, hath done, in his time, service to Christendom. He hath fallen from his duty, thru a snare set for him in mere folly and idleness of spirit. A message sent to him in the name of one who—why should I speak it—it was my own—induced him for an instant to leave his post.

King Richard.—And you saw him then, cousin?

Edith.—I did, my liege. It is no time to explain. Wherefore I am here neither to exculpate myself nor blame others.

King Richard.—And where did you do him such a grace?

Edith.—In the tent of her Majesty the queen.

King Richard.—Of our royal consort? Now by Heaven and by St. George, this is too audacious. That you should have admitted him to an audience by night, in the very tent of our royal consort, and offer this as an excuse for his disobedience and desertion! By Heaven, Edith, thou shalt rue this thy life long in a monastery.

Edith.—My honor, Lord King, is as little touched as yours, and my Lady the Queen can prove it if she thinks fit. But I have already said, I am not here to excuse myself nor inculpate others—I ask you but extend to one, whose fault was committed under strong temptation, that mercy which even you, Lord King, must one day supplicate at a higher tribunal, and for faults, perhaps, less venal.

King Richard (bitterly).—Can this be Edith Plantagenet, the wise and noble? Now, by King Henry's soul! Little hinders but I order thy minion's skull to be affixed as a perpetual ornament by the crucifix in thy cell.

Edith.—And if thou dost, I will say it is a relic of a good knight, cruelly and unworthily done to death by—(checks herself)—by one of whom I shall only say he should have known better how to reward chivalry.

Queen.—O peace—peace, for pity's sake, you do but offend him more!

Edith.—I care not, the spotless virgin fears not the raging lion. Let him work his will on this worthy knight. Edith, for whom he dies, will know how to weep his memory. To me no one shall speak of politic marriage to be sanctioned by his poor hand.

King Richard (stamping).—Away—away, the sun has risen on the dishonor of England and it is not yet avenged. Ladies, withdraw, if ye would not hear orders which would displease you; for by St. George I swear——

El Hakim (entering pavilion).—Swear not!

King Richard.—Ha, my learned Hakim, come, I hope, to tax our generosity.

El Hakim.—I come to request instant speech with you—instant—and touching matters of deep interest.

King Richard.—In what can I pleasure you, my learned physician?

El Hakim.—Great King, let thy servant speak one word and yet live. I would remind thee that thou owest to the Intelligences whose benefits I dispense to mortals, a life——

King Richard.—And I warrant me thou wouldst have another in requital, ha?

El Hakim.—Such is my humble prayer to the great Melech Ric, even the life of this good knight who is doomed to die.

King paces up and down and speaks to himself.

King Richard.—Why, God-a-mercy, I knew what he desired as soon as ever he entered the pavilion. Here is one poor life justly condemned to death and I, a king, and a soldier, who have slain thousands by my command, am to have no power over it. By St. George, it makes me laugh! Wife—kinswoman—Hakim—each appears in the lists as soon as the other is defeated. This is a single knight fighting against the whole mêlée of the tournament—ha! ha! ha!

El Hakim.—A doom of death should not issue from laughing lips. Let thy servant hope that thou hast granted him this man's life.

King Richard.—Take the freedom of a thousand of thy captive countrymen instead. This man's life can avail thee nothing, and it is forfeited.

El Hakim.—All our lives are forfeited. But the great creditor is merciful and exacts not the pledge rigorously nor untimely.

King Richard.—Thou canst show me no special interest thou hast to become intercessor betwixt me and the execution of justice, to which I am sworn as a crowned king.

El Hakim.—Thou art sworn to the dealing forth of mercy as well as justice. But what thou seekest, great king, is the execution of thine own will. As for the concern I have in this request, know

that many a man's life depends upon thy granting this boon.

King Richard.—Explain thy words—but think not to impose upon me by false pretexts.

El Hakim.—Know, then, that the medicine to which thou, Sir King, owest thy recovery is the talisman. Severe restrictions, painful observances, are necessary on the part of the sage who uses this mode of cure, and if he fails to cure at least twelve persons within the course of each full moon, the virtue of the divine gift departs from the amulet, and both the last patient and the physician will be exposed to speedy misfortune, neither will they survive the year. I require yet one life to make up the appointed number.

King Richard.—I cannot see how delivering a criminal from the death he deserves should go to make up thy tale of miraculous cures.

El Hakim.—When thou canst show why a draught of cold water should have cured you, when the most precious drugs failed, thou may'st reason on the other mysteries attendant on this matter. Ask, therefore, no more questions; it is enough that by sparing this man's life you will deliver thyself, great king, and thy servant from a great danger.

King Richard.—El Hakim, when you bid Richard Plantagenet fear that a danger will fall upon him for some ill omen, you speak to no ignorant Saxon or doting old woman, who foregoes her purpose because a hare crosses her path.

El Hakim.—I cannot hinder your doubt of my words, but will you think it just to deprive the world of the benefits of this virtuous talisman rather than extend forgiveness to one poor criminal? Bethink you, Lord King, that tho thou canst slay thousands, thou canst not restore one man to health. Thou canst cut off the head, but not cure the aching tooth.

King Richard.—This is over-insolent. We took thee for our leech, not for our conscience keeper.

El Hakim.—And it is thus the most renowned prince of Frangistan repays benefit to his royal person? Know, then, that thru every court of Europe and Asia—to Moslem and Nazarene—wherever honor is loved and infamy detested—to every quarter of the world will I denounce thee, Melech Ric, as thankless and ungenerous; and even the lands that never heard of thy renown shall yet be acquainted with thy shame!

King Richard.—Are these terms to me, vile infidel? (Strides up to him.) Art thou weary of life?

El Hakim.—Strike! Thine own deed shall then paint thee more worthless than could my words.

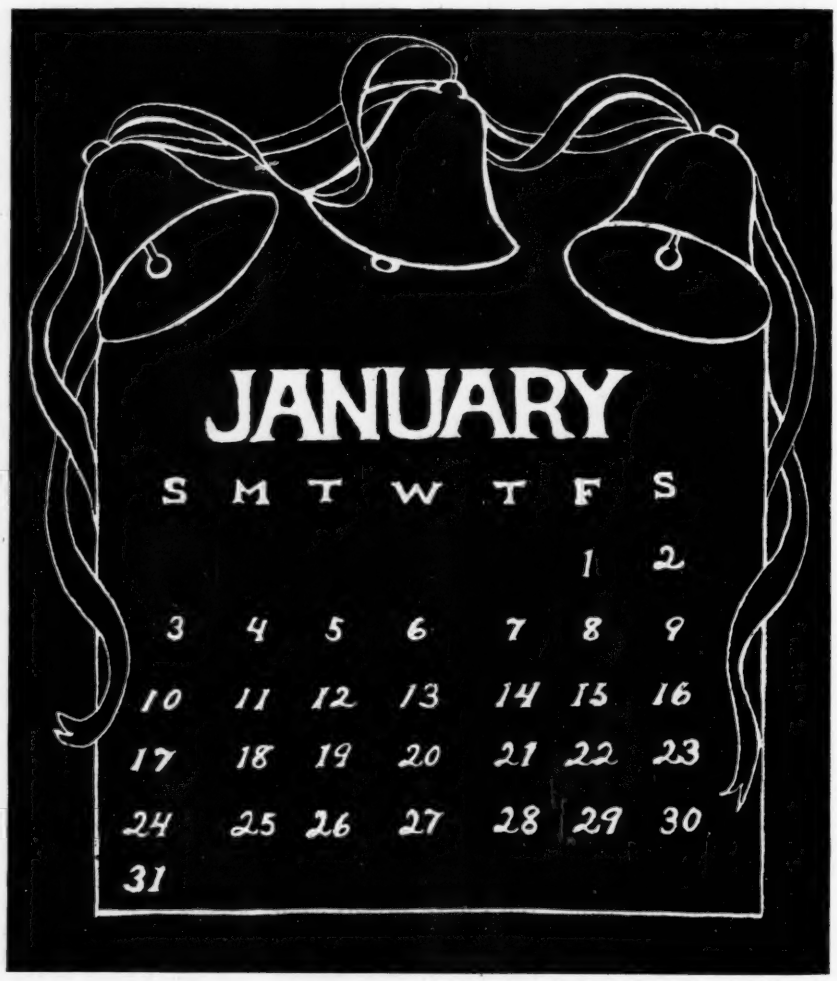
Richard turns fiercely from him and traverses the tent, then hastily traces a line or two on paper.

King Richard (to Neville).—The provost will deliver this Scot to you on this warrant. Bring him hither. (Exit Neville.) (King resumes pacing up and down.) (To El Hakim.) Thankless and ungenerous, as well be termed coward and infidel. (Enter Neville with Kenneth.) Hakim, thou hast chosen thy boon, and tho I had rather thou hadst asked my crown jewels yet I may not, kinglike, refuse thee. Take this Scot, therefore, to thy keeping. Use him as thy bond-slave, to be disposed of as thou wilt, only let him beware how he comes before the eyes of Richard. Is there aught else in which I may do thee pleasure?

El Hakim.—The bounty of the king hath filled my cup to the brim.

The Chicago board of education has been considering the report by Mr. Bodine, superintendent of compulsory education, to the effect that five thousand public school children are habitually hungry, and that about ten thousand others do not have sufficient food.

The report speaks of widows and deserted mothers who work long hours for a mere pittance.



Blackboard Calendar Designed by Anna Eastham, Oregon

The World's Commercial Products

How and Whence They Are Derived

Kinds of Cloth

Gingham

A cotton cloth used for dresses. It was originally manufactured in India, but was afterwards introduced into Europe. Its colors are not produced by printing the cloth, but by dyeing the yarn.

Grass Cloth

A fine soft fabric woven in China. It is made from the fiber of a species of nettle. The plant is often wrongly called China grass. It is estimated that nearly 2,000,000 pounds of this material are annually exported from China.

Gauze

Gauze is a thin, transparent, cloth woven of very fine fiber. Its name is said to have been derived from Gaza, in Palestine. Originally, it was made of silk. It is the result of a peculiar kind of weaving, the object being to keep the threads as far apart as possible. It is used for dress purposes and by millers for flour sifting.

Canvas

Canvas is a strong cloth made of linen, cotton, or hemp. The finer grades of canvas are used for needlework, the coarser for tent-coverings, sails of ships, etc. The canvas employed by artists is grounded a neutral gray, before being worked upon. There are certain sizes of artists' canvases, as kit-cat, 28 by 36 inches; three-quarters, 25 by 30 inches; half length, 40 by 50 inches; Bishop's half-length, 44 by 56 inches; and Bishop's whole length, 58 by 94 inches. Most of the canvas of commerce is manufactured in France, especially at the town of Flers, in the department of Orne. Canvas for needlework and tapestry is made at Beauvais and Paris.

Felt

Felt depends for its structure upon the natural tendency of woolen fibers and certain kinds of hair to combine with each other. The general process of manufacture is to card waste wool, moisten it with steam, and then pass it thru a felting machine in which it is beaten so that a compact cloth is formed. Felt is used for making carpets and covers of various kinds. In many cases a printed pattern ornaments it. From coarse felt the Russian peasantry make their winter garments, and especially boots and shoes, as it alone is capable of resisting the intense cold of Siberia. Gun-wads and pianoforte hammers are uses to which felt is put. The property of felting is taken advantage of in the manufacture of felt hats, for which the hair of various animals can be used. A kind of roofing is made of coarse felt saturated with pitch, coal-tar, or asphalt, and is employed for covering roofs, vessels, and iron buildings. The manufacture is widely distributed thruout Europe and the United States.

Alpaca

This is the long, silky, lustrous wool obtained from the animal called the alpaca, which is similar to the llama. The animal is domesticated in Peru and other South American States. Each animal produces from 10 to 12 pounds of wool. Alpaca is used for the manufacture of shawls, coat-linings, cloth for warm countries, umbrellas, etc. Vienna and guanaco are different species of alpaca. The color is of various shades, black, gray, and brown.

Broadcloth

This is a kind of woolen fulled cloth used for clothing.

Brocade

Brocade is an embroidered silk cloth enriched by flowers and figures. Gold or silver thread is often woven in it. Brocade was originally of Chinese manufacture, but the trade has passed to Europe, especially France. Brocades are now mainly used as upholstery cloths for furniture and hangings.

Blankets

These are covers, especially for beds. The best qualities of blankets are made entirely of wool, tho the most common ones are a mixture of wool and cotton, woolen weft and cotton warp, the cotton giving strength to the whole. Superior kinds are made in the United States, which bring high prices.

Bombazine

A mixed fabric of silk and worsted, the warp being silk. It is generally dyed black. In make it is fine and light. The chief seat of its manufacture was and is Norwich, England.

Food Materials

Carrageen

This is also known as Irish moss. It is a species of seaweed, which is collected and washed in fresh water and afterwards bleached and dried. It is then white or yellow in color. When boiled with milk it forms a stiff jelly, which has excellent nutritive properties. It is also employed for feeding cattle, and in the manufacture of paper, cloth, felt, straw hats, and for stuffing mattresses. Tho obtainable off the coasts of Ireland, carrageen is chiefly found in the United States.

Cassia Bark

This is sometimes known as China cinnamon. It contains an aromatic essential oil, similar to oil of cinnamon, and often used as a substitute for it. Cassia buds resemble cloves in appearance and are employed in the manufacture of confectionery.

Cauliflower

The cauliflower is a variety of cabbage. The heads alone are used as a vegetable. It can be obtained all the year round, but in winter time it requires careful protection from the cold.

Apricot

The apricot is the fruit of a tree. There are various forms and varieties. It is a native of Armenia, tho it is now cultivated in many parts of the world. From its kernel prussic acid may be obtained.

Artichoke

The artichoke is an edible legume derived from a thistle-like plant. It is a native of Barbary, but is now grown largely in the south of Europe. It is the flower head of the plant which is the article of commerce, immense quantities being sent to all parts of the world.

The Work of the Green Leaf

By PROFESSOR F. CAVERS, D.Sc., F.L.S.

[*In The University Correspondent*]

The vast importance of the part played in nature by green plants is seldom realized by those who have not studied Chemistry and Plant Physiology. The nutrition (and therefore the life) of man and of animals is absolutely dependent upon the work of green plants, since organic food can only be manufactured from inorganic raw materials by green plant-tissues exposed to light.

Until modern times it was believed, as Aristotle taught, that plants received all their food from, and grew entirely at the expense of, the *soil*. Aristotle argued that since a plant cannot, like animals, get rid of indigestible matter, all its food is elaborated beforehand in the soil, which must therefore act like a stomach and supply soup-like food for the roots.

Three hundred years ago, however, Van Helmont performed a historic experiment—the first ever made in plant physiology, so far as we know. He put into a pot 200 pounds of dried soil, stuck into it a cutting of willow, weighing five pounds, protected the soil in the pot from dust by covering it, and watered it daily with rain-water for five years. The cutting grew into a small tree, which, on being pulled up and freed of soil, weighed 169 pounds. To Van Helmont's surprise, the soil in the pot, on being again dried and weighed, showed a loss of only two ounces! He at once concluded that the 164 pounds of plant substance had been gained entirely from the water, and proceeded to elaborate a theory that *all* things come from water and consist of water in various forms! Certainly his use of the balance was a stroke of genius.

In 1779 Priestley, the discoverer of oxygen gas, noticed that plants kept in a closed vessel make the air around them richer in oxygen. In the same year Ingenhouss showed that this giving-out of oxygen only occurs in green plants and only in the light; that in darkness green plants give out carbon dioxide, as do all animals and all *not*-green plants both in light and darkness; and that all the carbon in green plants (forming about half of their dry weight) comes from the carbon dioxide of the air and not from the soil. This discovery, one of the most important ever made in the natural sciences, was neglected until a century later.

In 1804 the Swiss philosopher, de Saussure, published an account of his researches on green plants and the atmosphere. He found that when the plant absorbs carbon dioxide it gives out an equal volume of oxygen, and that part of the water which passes into the plant is neither exhaled as water vapor nor retained *as water*. He therefore concluded, rightly, that the elements of water are fixed by the green plant at the same time as the carbon from the atmospheric carbon dioxide. De Saussure's brilliant work was received with much scepticism; most scientists were still unwilling to believe that the solid matter of plants could be produced from a gas existing in such minute proportions (about 4 parts in 10,000) in the atmosphere.

However, Boussingault's experiments (1868) once and for all confirmed de Saussure's results; and almost simultaneously two important announcements were made by Sachs and by Bayer. Sachs showed that starch is the first visible product of carbon fixation in most green plants. Bayer suggested that a simple substance, formaldehyde, having the same percentage composition as grape-sugar, is first produced from carbon dioxide and water. Bayer's formaldehyde theory naturally led to a vast amount of research, and has now been definitely established.

It has long been known that by boiling formaldehyde with lime it can be condensed or "polymerized" into a sugar. Now, the sugar (acrose) obtained in this way differs from the sugars actually found in plants in being optically inactive, that is, in having no effect on polarized light. Quite recently, however, an optically active sugar (dextrose) has been produced from acrose by treatment with alkalis. But here a difficulty comes in. The first sugar actually produced in leaves is cane-sugar, which is more complex in structure than dextrose, and at present cane-sugar cannot be produced in the laboratory from simple substances. At this comparatively early stage, therefore, plant chemistry baffles the investigator, and the synthesis of even the simpler nitrogenous organic compounds has not yet been achieved artificially by any methods at all likely to take place in the living plant.

But tho the later stages in the food-making processes carried on in the green leaf cannot at present be imitated in the laboratory, some remarkable work is being done. It is claimed that formaldehyde is produced when a silent electric discharge is passed thru carbonic acid (carbon dioxide dissolved in water), and that there are in the leaf, when exposed to light, electric currents strong enough to produce formaldehyde in this way. According to this "photo-electric theory of photosynthesis," enunciated by Professor Harvey Gibson, the light-energy absorbed by the leaf is converted into electric energy which effects the breaking-up of carbonic acid to form free oxygen and formaldehyde.

Another remarkable theory is advanced by Usher and Priestley. These authors assert that the production of formaldehyde in the green plant is a purely chemical process. They killed water-plants, such as Canadian water-weed, by boiling, placed them in water containing carbon dioxide, and exposed them to light. They then found that the killed leaves still used up carbon dioxide and produced formaldehyde; they did *not*, however, exhale oxygen—as *living* green plants do under similar conditions—but produced *hydrogen peroxide instead*, and this product accumulated and soon stopped the whole action. Further experiments led them to infer that in the living plant this hydrogen peroxide is destroyed, as fast as it is produced, by some "ferment" which is secreted for this purpose by the living protoplasm of the plant.

A third hypothesis has been put forward by Brunner and Chuard, who state that too much attention has hitherto been focussed on the production of formaldehyde and sugars. They suggest that the carbonic acid may undergo *continuous* reduction, giving rise to many "radicles" or primary compounds containing carbon, hydrogen, and oxygen, from which by union and condensation a host of different organic compounds may be formed—acids, aldehydes, carbohydrates, etc.

This brief sketch of the history and present state of knowledge concerning the most fundamental and important process in Biology shows that, despite the advances made in the last few years and the new ideas that are now in the minds of "bio-chemists," the green leaf has revealed only a small part of its story, and that the processes carried on in nature's laboratory of synthetic organic chemistry are complex to a degree which remains far beyond the achievements of chemical science.

Geography Study by a Great Steamship Line

In the days when the early colonists came to America, it was a long, tedious journey from Europe to the New World. A single ship could carry no more than a few hundred bushels of wheat and hardly more than a hundred people. Year by year the number of days required for the trip has been lessened, but it was not until the days of the steamship that great advances were made in capacity of boat and swiftness of sailing.

One of the largest of the great ocean steamship lines is the Hamburg-American. It has been in existence for sixty years, and it put into commission the first steamship to ply between Germany and the United States.

The story of the growth and development of this line is in a way the story of modern ocean navigation. Its establishment in May, 1847, was most modest. In answer to a demand for direct traffic between Germany and the United States, the founders of the company got together the small sum of about $112,000. They ordered built three clipper ships that were to be the best of their class, and a little better adapted to the comfort of passengers than other vessels then in service. The first ship built was the *Deutschland.* She was followed by the *Nordamerika* and *Rhein,* and these by other vessels of practically the same size, 717 tons, each carrying a score of first-class passengers who were supplied with the rarity of separate berths. There was also room for two hundred emigrants and a little freight. The average trips took forty days from Hamburg to New York, and twenty-nine days for the return. This, at the time, was considered remarkably good running.

Research in old reports shows that the good ship *Deutschland* took, on her first trip to America, her full complement of passengers, 16 first-class and 74 second-class and steerage. No better comparison of the development of the shipping between this country and Europe could be made than by referring to a recent trip of the present *Kaiserin Auguste Victoria,* upon which 570 first-class, 300 second-class, 250 third-class, and 800 steerage, and 650 crew were carried on a single trip, and without overcrowding.

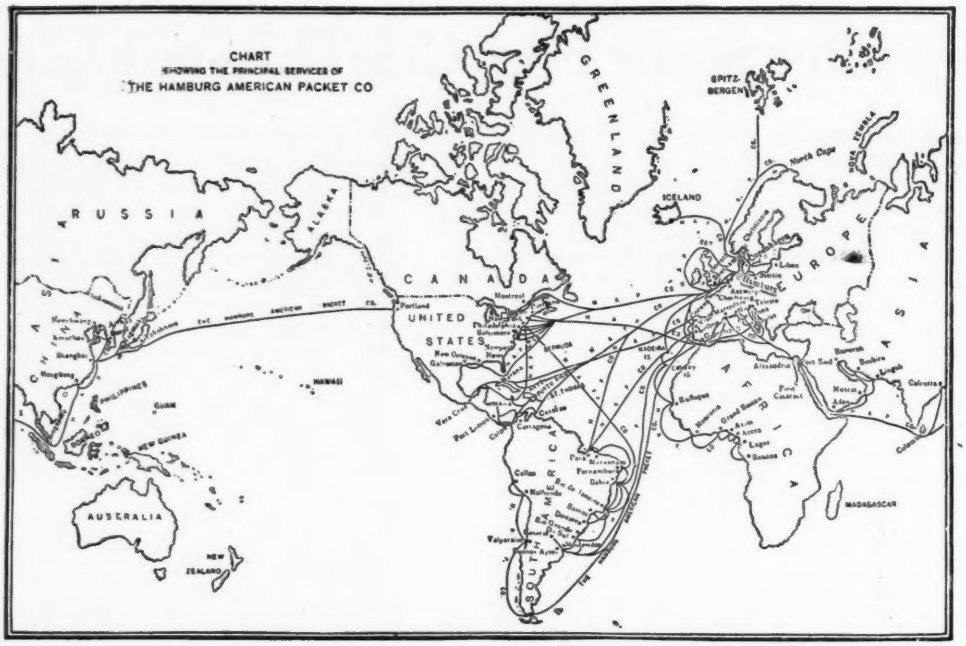
When steam was mastered, there was opposition to its introduction on ocean liners, some saying that divine Providence never intended vessels to be forced against wind and tide. It was no wonder the first vessel that crossed the Atlantic fitted with a steam engine and paddle-wheels sailed empty, for all her inviting cabins. The *Savannah,* however, took her wheels on deck and resorted to sails so often that she does not count as an ocean steamship. It was nearly twenty years after her experiment when the *Sirius* and *Great Western* raced across the sea, and men went wild over the possibilities of ocean navigation, and yet in their maddest dreams never approached to a thought of what was to come in less than three-score years. After the memorable voyages of May, 1832, the trails of smoke across the Atlantic slowly increased. As a rule the steamers reached port first, but there were instances when a clipper passed a steamer and got in ahead.

In 1854, the Hamburg-American company recognized that the time had come to start the first regular and direct German steamship line. The order for two iron steamships was given to Caird & Company, of Greenock. These were to be of 2,026 tons and of a speed of 12 to 12½ knots. The full complement of crew consisted of one captain, four officers, a purser, four engineers, a doctor, and 67 seamen,—77 in all. The ships were to be 320 feet long, a size considered stupendous in those days, and to have a registered horsepower of 375. (The *Kaiserin Auguste Victoria,* the latest ship of the line, is 700 feet long, and the fast-flying *Deutschland* has nearly 40,000 horsepower.) She carried 54 first-class passengers, 136 second-class, and 310 steerage. The furnishing of the *Borussia* made something of a sensation. We read of red velvet upholstery and gilded frames, of mirrors, and beautiful landscape paintings hung in the saloons. The speed record was now cut down to sixteen days.

Within a year after their going into commission the *Borussia* and *Hammonia* had made so good a report for themselves that two new steamships were ordered. The original steamships had been built after the pattern of the first propellers, with open companion-way and with high bulwarks on both sides. The new vessels were the first to have the upper deck extended over the entire length and width of the vessel. This remained the type of ocean liners for thirty years.

In 1860 a fortnightly service was instituted between Hamburg and New York, and occasionally a vessel was despatched to New Orleans. The *Germania,* built in 1862, was the first to have the construction of the main saloon entrusted to a German firm. Her decorations and furniture were considered superior to any seen in New York Harbor. The *Allemannia,* built in 1865, was finer still in this respect, and attracted a crowd when in port. At the outbreak of the Civil War the Hamburg-American line had become a carrier of the United States mails, and Southampton was made a port of call. The new ships made the passage between this port and New York in about ten days.

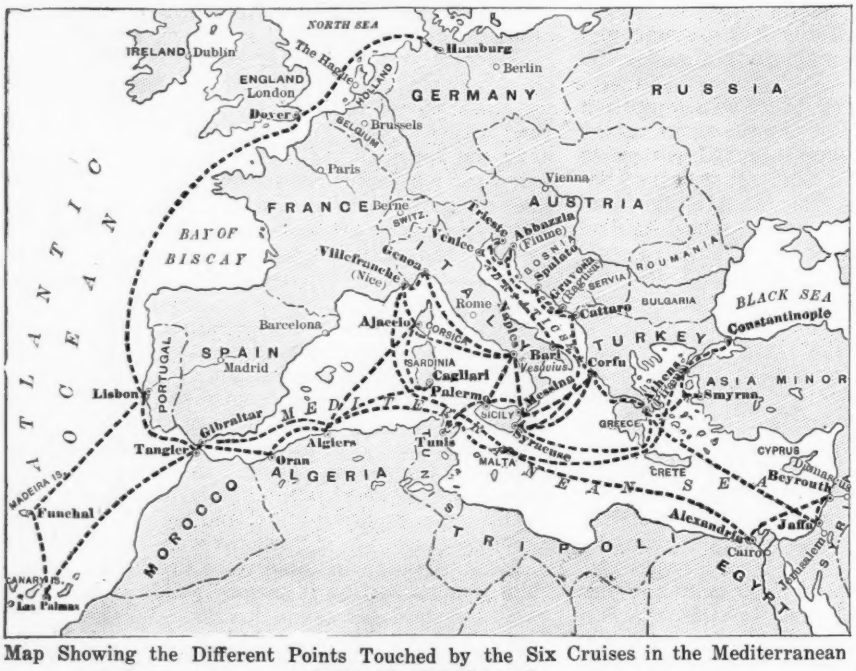
In 1887 the Hamburg-American company decided on another momentous move, applying the twin-screw system to merchantmen. The *Fürst Bismarck* was built at Stettin in 1890. She held the speed record for some time, bringing down the time between New York and Southampton to six days, ten hours and fifty-eight minutes. The twin-screw gave a double chance of running the ship in case of accident to the machinery. There were water-tight compartments so deftly built that the danger from collision was nullified. The science of ventilation had been developed, and a system introduced throughout the vessel giving perfect immunity from foul air or ship odors. Public rooms and cabins were commodious and, with fittings and decorations far beyond any that had been seen at sea, they created for themselves a lasting reputation. Suites of rooms with private baths were introduced, and the ship was flooded with electric light. In the second saloon was comfort that exceeded that of most ocean steamships in the first. Bath-rooms, smoking-room, and ladies' cabin were provided there, the staterooms were on two decks, and the service and table were excellent. At the time of construction it seemed as if the last word had been said for ocean luxury. We know now that it had not, but it would have been a bold man who had dared speak of improving on the *Fürst Bismarck* when she was the fastest ship afloat and



an example of what was considered then "colossal luxury."

At the time of the Paris Exposition in 1900 the Hamburg-American Line met the demand for passage with a service of fourteen magnificent twin-screw steamships. The last built was the *Deutschland,* the fastest and most splendid ship afloat up to a recent date. Her best crossing has been in five days, 11 hours and 45 minutes. On this trip she maintained a speed of 23.51 knots per hour. The highest daily run was 601 knots, equal to 691 statute miles. The vessel is of 16,000 tons burden and has a length of 686 feet with a width of 68 feet and depth of 44 feet. There is nothing of the narrow limitations of the old ocean liner here. It is all spacious on deck and in the great hallways and huge apartments. An additional measure of safety was the installation of a system whereby a touch of the master's hand on the bridge almost instantly closed the doors of the water-tight compartments throughout the ship. The *Deutschland* is still one of the most important steamships afloat.

The latest great achievements of the Hamburg-American company in shipbuilding are the *Amerika* and the *Kaiserin Auguste Victoria.* The *Amerika* is 687 feet in length, 74 in width, and 53 in depth, and is of 23,000 tons burden. The *Kaiserin Auguste Victoria* measures 700 feet in length, 77 in width, and 54 in depth. She is of 25,000 tons burden, and has eight decks, one more than the *Amerika.* She carries 580 first-class passengers, 300 second-class, 250 third, and 2,300 steerage. The crew numbers 650 officers and men, 150 more souls than composed the whole sailing-list of the first steamer of the line, the Borussia.



Map Showing the Different Points Touched by the Six Cruises in the Mediterranean by the S. S. "Meteor"

The Hamburg-American company takes its ships into practically every well-known seaport on earth. The line has for a long time encircled the globe. Its immense fleet to-day consists of 351 vessels, with a tonnage of 811,543 tons. Of this great fleet 23 are large, sumptuous twin-screw steamships. The most important of the 52 different services are the three between New York and Hamburg. Another popular service is the twin-screw steamship line between New York and Naples and Genoa, with special sailings of the fastest and largest ships in the winter season. Other services are the Atlas line to the West Indies, South and Central

America; the lines to China and Japan, making ports at the Straits Settlements; the winter services along the Riviera and between Italy and Egypt and tht splendid service of the specially constructed boats on the river Nile. There are services from Hamburg to Montreal, Boston, Portland, Philadelphia, Baltimore, New Orleans, to the West Indies, the Spanish Main, Mexico and South American ports.

Some idea of the extent of the business of the line may be had in the statement that the steamships, aside from the river services, made 1,256 round trips during the last calendar year, carrying 333,926 passengers and 5,804,798 tons of freight.

Some idea of the size of a first-class modern steamship may be obtained by a glance at the picture of the *Amerika* standing on end beside the Washington Monument. The monument at Washington is a stupendous shaft of granite, 555 feet, $5\frac{1}{8}$ inches in height. It is 55 feet square at the base, 34 feet at the top. The foundation of rock and cement is 36 feet deep, 126 feet square. It is the highest work of masonry in the world. Yet it is comparatively insignificant as compared with the *Amerika*.

If the Hamburg-American fleet were welded into one mammoth steamer, it would be nearly five miles long, more than a mile wide, and about a mile deep. To load it with bales of cotton would require the average yield of two million acres; it could take the wheat-crop of three-million acres; and half a billion feet of lumber would not fill it.

The fleet touches regularly at the ports of New York, Boston, Philadelphia, Baltimore, Norfolk, Newport News, Galveston, San Francisco, and Puget Sound. It brings every one of these widely distributed American ports into direct communication with nearly all the world. If there were no other boats on the seas, an American exporter would find a list of about 500 ports where his goods might be landed. He might not only ship to every seaport that he could name, but he could get thru bills-of-lading to scores of such unheard-of ports as Pulo Weh, Siam; Soloo, East Indies; Ahwaz, Persia; Nossi Be, East Africa; Half Jack, West Africa; Bedsted, Denmark; Yxpila, Finland; and Oernskoeldsvik, Sweden.

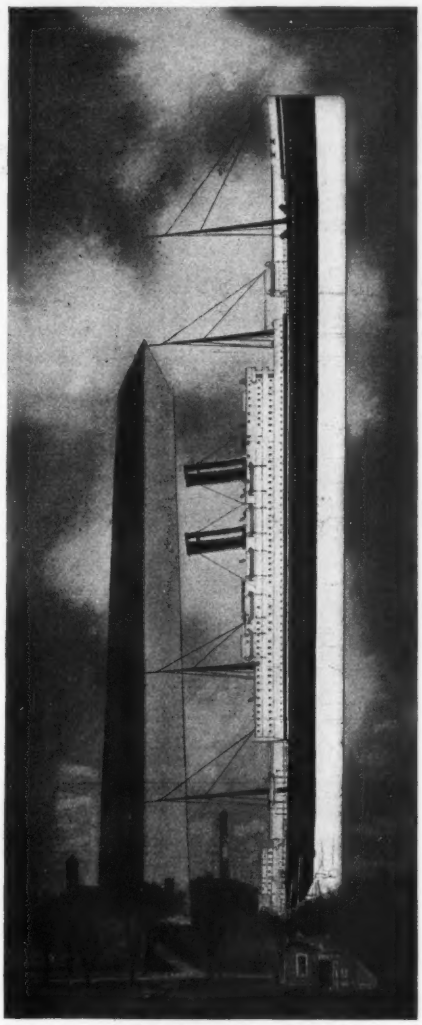
The capacity of these great steamers is enormous. The express steamer *President Lincoln* has a gross register of 18,500 tons. After deducting cabin space for 1,450 passengers of all classes and bunker space for 2,000 tons of coal, there remains 785,000 cubic feet for cargo. If loaded exclusively with one kind of freight, it could carry any one of the following quantities: 590,000 bushels of wheat, or 628,000 of corn; 31,000 bales of cotton, or 15,000 tons of copper; 65,000 barrels of oil, or 825,000 boxes of dried fruit. In actual practice, however, this steamer would carry more than fifty varieties of cargo, from green apples to radiators.

If we could go to the Hamburg-American dock and watch the loading of a steamship, this is about what we should see packed into its holds. The items are taken from the record of an ordinary cargo leaving the port of New York:

Corn and wheat, 170,000 bushels.—Lubricating oil, 3,362 barrels.—Lard, 6225 barrels and tubs.—Dried prunes, 11,625 boxes.—Cottonseed oil, 700 barrels.—Phonographs, 174 cases.—Typewriters, 73 cases.—Sewing-machine woodwork, 867 cases.—Agricultural implements, 3,219 packages.

In all, sixty-two kinds of American products (most of them manufactured) were loaded into this one vessel. Many of these products stopped in Europe, but others were transferred to other ocean steamers, to be eventually transferred to river boats and thence find their way inland by railroads, by canoes, by donkeys, by elephants, by camels, and by human carriers.

The world-wide distribution of the cargo of a single outgoing steamer may be shown by that of one trip of the *Graf Waldersee:*



S. S. "Amerika" (700 feet), Compared with the Washington Monument (the Tallest Masonry Structure in the World, 555 Feet)

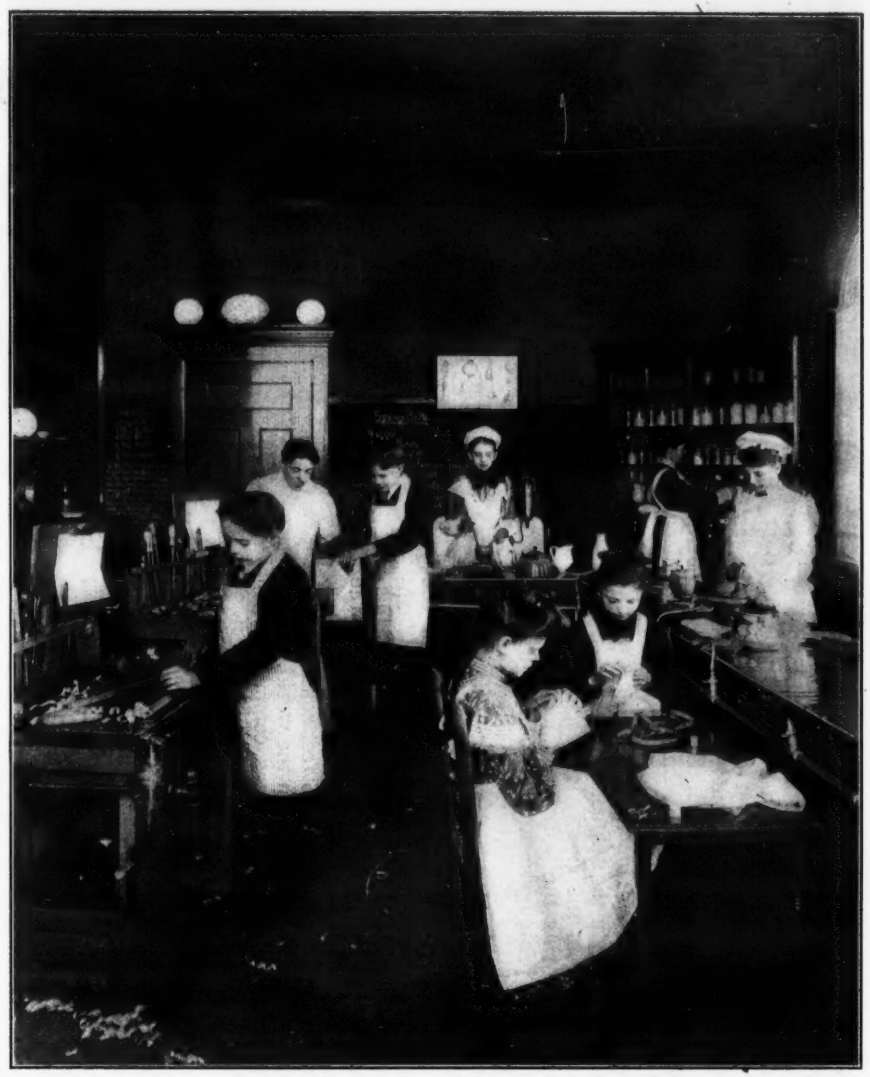
Germany: Hides, lard, garden seed, dried peas, cottonseed oil, copper, evaporated apples.—Russia: Roofing paper, nails, scythe stones, cement, coke forks, machinery, hardware, ice-cream freezers, brass goods, agricultural implements, shade rollers, traps, cotton, carriages.—Roumania: Shade rollers, hardware, grindstones, combs, pumps, guns, toothpicks, pulleys, chair-seats, churns.—Spain: Brick molds, castings, cement, hardware.—Portugal: Books, cash registers, engines, cotton.—Bulgaria: Pumps.—Denmark: Lard compound, shade rollers, oars, hardware.—Finland: Bacon.—Sweden: Radiators, evaporated apples, churns, lubricating oil, varnish, lard.—Malta: Bolts and washers.—Greece: Wheels, books.—Turkey: Pumps, stoves, trolley-cars.—Asia Minor: Pumps.—Syria: Chairs, pumps.—Canary Isles: Tobacco.—West Africa: Tobacco, nails, shoes, bacon, dried fish, candy, pork, beef, oil stoves, dry-goods, photographic materials, incubators.

East Africa: Organs, dry-goods, type, grape juice, sewing machines, boiler hardware, roofing paper, safes, copying presses, tobacco, water tanks, machinery.

Egypt: Machinery.

The First Kindergarten

Copyright, 1905, Marie R. Garesche.



A Modern Manual Training School

Copyright, 1905, Marie R. Garesche.

[See note on page 168]

Educational Museum of St. Louis Schools*

By C. G. RATHMANN, Assistant Superintendent of Schools

HOW THE MATERIAL IS DISTRIBUTED

The material is sent to the schools by wagons, exclusively in the service of the museum. The schools are grouped into five sections, each of which has a delivery day once a week. The principal of a school which has its delivery day on Monday asks his teachers on the preceding Friday to send him the numbers of all the collections which they need for the illustration of their lessons during the following week. These numbers he inserts in an order blank and sends the order to the Curator, and on the following Monday the wagon delivers the material at the school, taking back at the same time the collections used during the previous week.

HOW THE MATERIAL IS USED IN GEOGRAPHY

There is nothing in the traveling museum which cannot be used in direct connection with the work of the schools. It contains no curiosities or abnormalities; no freaks of nature. It is not a cemetery of bric-a-brac, but a nursery of "living thought."

The material is not simply shown the children as new and extraordinary things to satisfy their curiosity. The specimens of mammals, birds, insects, etc., the minerals, the natural and manufactured products of a country, are placed before the children to verify what they themselves, carefully studying the relief map, have discovered thru their own observation and reasoning as to animal and vegetable life, soil products, and occupations of the people. The objects are handled, observed, studied, compared with each other and with such as have been considered in connection with other countries, and generally discussed. The pupils determine how the products before them affect trade, commerce, and civilization generally, and they decide lines of transportation, ocean trade, etc. Each child in the class takes up one of these objects, and, by his own reading, gathers all the information he can regarding it and presents such information to the class.

By means of the photograph, the lantern slide, and especially the true life-like stereoscopic pictures, we take the children into the world; by means of typical objects we bring the world to them.

Real things and good pictures representing all parts of the world speak to the children in far more interesting and convincing language than the textbook or the teacher's description. They arouse his self-activity, they awaken in him the desire to learn more about our wonderful world and cultivate in him the power to picture to himself facts, conditions and natural forces, which we have no means of illustrating.

The child brought up with but little acquaintance with anything but the printed page, says James in his "Talks to Teachers," is always afflicted with a certain remoteness from the actual facts of life, and a certain insecurity of consciousness which makes him a kind of an alien on the earth in which he ought to feel himself perfectly at home.

USE OF THE MATERIAL IN NATURE STUDY

In nature study we insist that living specimens be used for illustration whenever they can be procured. The surroundings of every city afford unlimited means of illustrating plant and insect life, for instance. But live birds, fishes, reptiles, amphibia and mammals, with the exception of a few, cannot be procured or cannot be handled in the schoolroom. Still many of them live with us and around us. We want to make the children acquainted with them, and the museum supplies them.

As a rule, the children know but few of the birds they see around them every day. Thru judicious study of the mounted specimens in the schoolroom, we awaken their interest and encourage them to go out and find the living birds in their proper surroundings, to observe them, their habits, their song, their food, their flight, how they build their nests, how they protect themselves, etc., and then to give the results of their observations to teacher and classmates.

One of the Museum Wagons

MATERIAL FOR THE ILLUSTRATION OF PHYSICS AND PHYSICAL GEOGRAPHY

For the illustration of elementary physics in the seventh and eighth grades, and of physical geography, the museum furnishes the schools the necessary apparatus. Iron, copper, and platinum wire, glass tubes, alcohol lamps and Bunsen burners, microscopes, sonometers, organ pipes, magnets, dry batteries, force and lifting pumps, air-pumps, steam- engines, etc., for the illustration of elementary science, and compasses, whirling tables, tellurians, etc., for physical geography, are sent to the schools upon requisition of the principal. The catalog gives descriptions of easy experiments to be performed with the apparatus, experiments which enable the pupils to understand the facts, conditions, and phenomena to be learned much better than the textbook or the teacher's description could do. The explanations of the catalog also convince the teacher that the proper use of the apparatus requires not an accomplished physicist, but an intelligent teacher. The following collections, with their explanations, may show how the apparatus furnished by the museum is used:

[*The first part of this article was published in the December number of the SCHOOL JOURNAL under the heading "A Model School Museum: What St. Louis Has Done." The Editor desired to call special attention to its general usefulness by eliminating from the title every suggestion of a purely local bearing. However, the author would rather have the title retained which he had written, and so his wish has been complied with in the present instance. Mr. Rathmann has been in charge of the Educational Museum from the first day of its operation. It is probably because of the fact that the present museum is largely the result of his work that he prefers the title chosen by him to the one substituted by he Editor. The article is full of helpful suggestions applicable to schools everywhere.—THE EDITOR.]

EXHIBITS SHOWING THE VARIOUS STAGES IN THE MANUFACTURE OF THINGS IN DAILY USE

Exhibits showing the various stages in the manufacture of things in daily use, from the raw material to the finished product, of which the museum possesses a large number, are of the highest value. Properly presented and discussed, they enable the child to look into the social, commercial, and industrial life of a people. How many children ready to leave school have an idea of the great number of processes thru which an object in daily use, the pencil, the needle, the shoe, etc., has gone in its manufacture? They see only the finished product and become accustomed to having millions of hands take care of them without their help or without their even showing an interest in those who thus serve them. "The children," as Dr. Kolar, of Vienna, says, "should be given some idea how much thought, how much care, how much labor there is contained even in the smallest object in use in life. They should learn to follow the evolution of everyday objects, should learn to discover what wonders created by inventive minds and human industry their immediate environment contains, what exertion and what sum of technical study are necessary to make the simplest utensils. We must teach the children to have greater respect for the wonders of nature, but also for the wonders of human creation."

The material of the museum is very extensively used, the demand upon it becomes larger every year. During the first year five thousand collections were sent to the schools; during the second, 11,500; and during the last term 22,000 collections were ordered by the schools.

The number of different individual collections sent out by the museum is 1,050. Many schools order the same material at the same time; hence a large number of duplicate collections are necessary. These duplicate collections amount, at present, to six thousand.

OTHER DEPARTMENTS OF THE MUSEUM

This is a brief sketch of our traveling museum, our museum on wheels. But while the circulating material constitutes the most important part of our museum, the institution contains other features which are of signal value to our educational system. These are:

The Study Exhibits for Teachers.

The Exhibit of Educational Material from Foreign Countries.

The Exhibit of our own School Work.

The Teachers Library.

STUDY EXHIBITS FOR TEACHERS

An exhibit of collections in circulation is placed in glass cases in the large museum hall of the Wyman School. This is the study exhibit for the teachers which enables them to become thoroly acquainted with all that the museum contains and gives them an opportunity to acquire, with the help of the museum library, such information as they need to use the material intelligently and profitably. No normal school or teachers college can give its students the general information in all departments of science which a modern teacher must possess to go far beyond the text of the book and make the work interesting and valuable; but a museum arranged in accordance with the course of study and supplied with a good reference library, can accomplish this. Our teachers make good use of these exhibits, and many of them tell me how the study and use of the material has widened their horizon, how much better they master the subjects to be taught and how much more pleasure and satisfaction they find in their work.

EDUCATIONAL EXHIBITS FROM OTHER COUNTRIES

The third department contains educational exhibits from other countries. These exhibits, representing the schools of some of the leading countries of the world, show the written work, work in drawing, manual training, etc., from the kindergarten to the high and normal schools; textbooks, courses of study, reports, statistics and school appliances; photographs, plans, and models of school buildings, etc. These exhibits give our teachers valuable opportunities to study the educational systems of other lands.

EXHIBIT OF WORK OF THE ST. LOUIS SCHOOLS

The exhibit of the work of the St. Louis Public Schools, which was displayed at our World's Fair and at the Jamestown Exposition, constitutes the fourth department. The specimens of the children's work in the various branches of study will be replaced by new work from time to time so as to show visitors the status of the work in the schools at the time of their visit.

THE TEACHERS' LIBRARY

The teachers' library forms the fifth department of the Educational Museum. It contains the best publications on philosophy, psychology, education, science and literature, the textbooks used in our own and other countries, reference books giving information on all the material in the museum, and the leading educational and other magazines. The number of volumes is at present seven thousand. Two thousand volumes of the valuable private library of Dr. Soldan, our late superintendent of schools, have just been presented to our teachers' library by his widow.

Each teacher is supplied with a catalog of the library. Teachers may, if they so desire, order books in the same manner as they order museum material, and the books are sent to them by the museum wagons, the latter taking back such volumes as the teachers wish to return.

The museum is open thruout the year from 9 A. M. to 5 P. M., every day except Sunday. The library and reading-room are open to teachers from 3:30 P. M. to 5 P. M. daily, and from 9 A. M. to 5 P. M. on Saturdays.

Every day the museum and the library are visited by teachers of our schools. The institution is steadfastly developing into what the board of education intends it should be: for the children, the means to become better acquainted with the world in which they live; for the teachers, a gathering place offering the best opportunities for professional study and self-culture.

Dinsmore's Teaching a District School, by JOHN WIRT DINSMORE, A.M., Dean of the Normal Department, Berea College. The special mission of this book is to help the district teacher in solving his problems and discharging his duties. It deals with every phase of the work and every difficulty which confronts the country teacher. Each problem is treated in a clear, practical manner, and discussed in plain, simple language. The book will be particularly valuable to young teachers, but it can be read with great profit by those of experience. The writer has been a country teacher, and the advice that he gives represents long research, patient investigation and wide experience. The suggestions given in the book are thoroly sound, and every chapter will well repay reading.

Cloth, 12mo, 246 pages. Price, $1.00. The American Book Company, New York.

Lesson Plans for the Fifth Grade

Where the Group System is employed, the portion of the work marked "recitation" may be carried out by one group, while the other group is doing the "seat work."

Monday

Morning Exercises.—Topic for brief discussion: Supposing a pupil jams his finger in the doorway. What can be done to relieve the pain? To prevent losing the finger-nail? To prevent blood-poisoning, etc.?

ENGLISH

Seat Work.—Write a description of Barbara Frietchie, from reading Whittier's poem. Note Barbara's age, form, hair. What do you think of her eyes? Hands? Skin? Strength of arm?

Recitation.—Correct pronunciation and enunciation: Was, not *wus;* capital, not *capitle;* mountains, not *mountins;* history, not *histry;* geography, not *jogerphy;* again, pronounced *agen,* not a-gain or *agin;* newspaper, not *noospaper;* believe, not *blieve;* with (hard *th,* not soft *th* as in thin); beneath, hard *th.*

Enunciation:

> Peter Piper picked a peck, a peck of pickled peppers. A peck of pickled peppers did Peter Piper pick. If Peter Piper picked a peck of pickled peppers, then a peck of pickled peppers did Peter Piper pick.

GEOGRAPHY

Recitation.—Groups of States. With aid of geography pick out the several groups. In accordance with the plan followed in report of U. S. Commissioner of Education, groups are: North Atlantic—Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania; South Atlantic—Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida; South Central—Kentucky, Tennessee, Alabama, Mississippi, Louisiana, Texas, Arkansas, Oklahoma, Indian Territory; North Central—Ohio, Indiana, Iillinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas; Western—Montana, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Idaho, Washington, Oregon, California.

Seat Work.—With the aid of books on U. S. history, make a list of the states, by groups, indicating which belonged to the original thirteen states, and the date when each of the others became a state.

HISTORY

Recitation.—Voyage of Sir Humphrey Gilbert, and Raleigh's first expedition.

Seat Work.—Study from text-book and reference books about the personality of Gilbert and Raleigh. (An interesting sketch of Raleigh is given in "The Making of Virginia and the Middle Colonies," by Samuel Adams Drake.)

MATHEMATICS

Recitation.—For speedy calculation: Cost of 3 pairs of gloves at $\frac{1}{3}$ of a dollar apiece. 6 pumpkins at $\frac{1}{4}$ dollar each. 2 pairs of slippers at $\frac{2}{3}$ of a dollar. Price of a book costing $\frac{7}{8}$ of a dollar. Cost of 2 bushels of apples at $\frac{3}{4}$ of a dollar each. 8 collars at $\frac{1}{5}$ dollar each. 10 pencils at $\frac{1}{20}$ of a dollar each. Price of a bottle of ink costing $\frac{5}{8}$ of a dollar. Price of a hammer costing $\frac{4}{5}$ of a dollar. Price of stockings costing $\frac{4}{5}$ of a dollar. Cost of 3 hats at $\frac{9}{10}$ of a dollar each. Price of two dozen plums costing $\frac{1}{6}$ of a dollar per dozen. Price of goldfish costing $\frac{5}{6}$ of a dollar. Cost of 3 yards of lace at $\frac{3}{8}$ of a dollar per yard.

Seat Work.—Write seven problems similar to the above.

NATURE STUDY

Desk Work.—Write the names of ten articles that you can recall, that are made of wood.

Recitation.—Kinds of woods to be seen in the schoolroom, as teacher's desk of oak, etc. If there are any woods employed that you are not sure about, allow pupils to take every possible means of finding what the woods are.

Tuesday

MORNING EXERCISES

Have each person in the room state some one thing that he has done in the past week to help somebody else.

ENGLISH

Dictation Exercise.—Sir Walter Raleigh is said to have scratched with a diamond ring, upon a window-pane, where Queen Elizabeth could see it, the following:

"Fain would I climb, but that I fear to fall."

Queen Elizabeth wrote below, this answer:

"If thy heart fail thee, then climb not at all."

Special attention should be paid to correct punctuation.

GEOGRAPHY

Seat Work.—Find approximate latitude and longitude of each of the groups of states. Write out, but do not memorize.

Recitation.—With the aid of a large map of the United States, calculate about what proportion of the country is occupied by each group of states.

HISTORY

Recitation.—First colony, at Roanoke.

Seat Work.—How did Virginia come by its name? How many colonists went from England to Roanoke? Why did they emigrate from England? Find Roanoke Island on the map. What Indians did they meet with? What bay preserves the name of this tribe?

MATHEMATICS

Recitation.—Discuss meaning of debtor and creditor, using numerous examples, such as: John Smith bought apples and potatoes of his grocer; which was creditor, debtor? John Wanamaker sold a gold watch to Mrs. Green; which was debtor, creditor?

Seat Work.—Henry Smith bought of Walker, Brown & Co., hardware dealers, 2 pounds of tenpenny nails at 10 cents a pound; a screw-driver for 50 cents, and a dozen books at 2 cents apiece. Make out an itemized bill, and have it properly receipted.

Wednesday

MORNING EXERCISES

Discuss ways in which we can show our love to our parents, and our gratitude for what they have done for us.

ENGLISH

Seat Work.—Write a letter to a cousin, telling about what you can see from a window in your home.

Recitation.—The correct method of writing a letter, date, locality, correct form of address, closing, etc.

GEOGRAPHY

Desk Work.—Find on map latitude and longitude of New York State. How does the state compare in size with the largest state in the Union? With the smallest? Find, from a U. S. history, how New York came by its name.

Recitation.—Have pupils tell the climate of the state from the latitude, surface and surrounding waters. From the climate determine the productions. From these, and a study of location of the chief cities, let pupils name the chief industries.

HISTORY

Recitation.—Settling of Jamestown.

Desk Work.—For whom was Jamestown named? What was the date of settlement? Where was Jamestown located? What Company sent out the colonists? How many colonists were there? What brought the emigrants to America? What was the first building constructed? (James Fort.) What was the shape of the fort?

NATURE STUDY

Desk Work.—Find from reference books how many and what kinds of oak trees are found in America. What oak tree was famous in connection with U. S. history?

Recitation.—What is the general shape of the oak tree? Shape of leaf? Kind of blossom? Fruit? Common species? (White, red, black, burr.) What plant grows on the oak (mistletoe). Uses of oak wood.

MATHEMATICS

Reduction of business fractions to their decimal equivalents.

Change to decimal form, ½, ¼, ¾, ⅛, ⅜, 1/20, 3/20, ⅓, ⅔, 3/10, etc.

Thursday

MORNING EXERCISES

Ask that each pupil bring to school a copy of a daily paper of the day before. Help them to select the really interesting and valuable "current events" recorded therein.

ENGLISH

Dictation exercise in capitalization:

The Spanish explorers came to the American shores to find gold.

The Dutch settlers came over to trade with the Indians, and the Pilgrim Fathers were looking for a home.

GEOGRAPHY

New York State: Why called "Empire State"? How many inhabitants? Locate New York City. Give population of New York City. What has made New York the second largest city in the world? People of how many nationalities live in New York, that you know about?

HISTORY

Seat Work.—Write an outline of the events in the history of the colony at Jamestown up to 1624.

Recitation.—Work of Captain John Smith for Jamestown colony. Part played by Powhatan and Pocahontas. Story of Pocahontas and John Rolfe. Lord Delaware.

NATURE STUDY

Recitation.—Bring to the class a crosscut piece of oak wood. Count the rings and explain their relation to the growth of the tree.

Desk Work.—Look up in dictionary the meaning of the following words as applied to wood: grain, cross-sawed, quarter-sawed, bark, timber, log, branch. Why are articles made of oak of different shades of brown or green? What different stains are applied to oak? (Quaker, log oak, etc.) What makes an oak chair shiny? (Varnish, oil, etc.)

MATHEMATICS

Seat Work.—Write ten problems, using score or dozen in each.

Recitation.—Work problems written as seat work by pupils on Monday, using business fractions, for speedy calculation.

Friday

MORNING EXERCISES

Of what we are a part: Every pupil one of a family, the school, the neighborhood, the city or town, the state, the country.

ENGLISH

Seat Work.—Select and copy from reader four sentences showing four different uses of capitals.

Recitation.—Read "The Blessing of the Cornfields" from "Hiawatha." Correlate with story of Jamestown, as studied in connection with history lesson.

GEOGRAPHY

Seat Work.—Draw a map of New York State, indicating the principal lakes, river, mountains, New York City and Albany.

Recitation.—Physical features of New York State: Hudson River, Great Lakes, smaller lakes, Catskill and Adirondack mountains, Niagara Falls.

HISTORY

Seat Work.—Read from reference books about life in the colony. Occupations, houses, clothing, food, recreations, etc.

Recitation.—Review and summary of week's work in history, especialy getting pupils to tell complete and connected stories.

NATURE STUDY

Have pupils tell, as complete stories, what they know of the oak tree and its wood.

MATHEMATICS

Recitation.—Explain compound fractions, and reduction of compound to simple fractions.

Seat Work.—Write ten compound fractions and reduce them to simple fractions.

Topics for Discussion of Current Events

The following topics for study and discussion in connection with current events are taken from a public school bulletin recently published at Tacoma:

The Success of the Liberal Party in Cuba: (1) Who is the newly elected President? (2) For how long a term is he elected? (3) What does the success of the Liberal Party indicate? (4) Sketch briefly the principal events that have happened in the island since the Spanish American War, thus making a background for present conditions in the island. (5) When are the forces of the United States to withdraw from the island?

Death of the Chinese Emperor and Conditions in China: (1) Discuss briefly the nature of the people and government. (2) Who was the Dowager Empress? Tell something about her.

The Recent Controversy Between the German Emperor and Chancellor von Buelow and the Reichstag: (1) What kind of a government does Germany have? (2) What is the Reichstag? (3) Why were the people and their representatives so excited about what the Emperor had done?

The Convening of Congress: (1) Is this a first session or a second session Congress? (2) What is its number? (3) Of how many members will it be composed? In Senate, in House of Representatives? (4) What are some of the important problems that it will probably be called upon to solve?

Present Day History and Geography

Notes of the News of the World

In the present Congress the Republicans have a majority of thirty in the Senate and fifty-three in the House. In both houses the Republican majority will probably be slightly less in the next Congress.

The director of the United States census estimates that the cost of the thirteenth census, in 1910, will be something over $14,000,000. This, he says, will be a saving to the government of about $1,000,000, as the census office is now organized to its highest point of efficiency; no time will be lost in getting ready, testing green clerks, and in developing new systems.

Mr. Truman Handy Newberry has succeeded Mr. Victor Howard Metcalf as Secretary of the Navy. Mr. Newberry has been assistant secretary under Mr. Metcalf.

At noon, on October 21st, cornetists standing in the belfry of the Park Street Church, Boston, played "America." It was the one hundredth anniversary of the birth of the Rev. S. F. Smith, the author of the words of the well-known hymn.

The Atlantic fleet left Manila December 21 on its home voyage. It was planned that after stopping at Colombo, Ceylon, for six days, it would proceed without stopping to Suez. After leaving Port Said it will be divided into squadrons, different sections sailing to Athens, Tripoli, Marseilles, Genoa, Malta, Naples and other Mediterranean ports. It will reach New York or Hampton Roads February 22, after having gone over a distance of more than 42,000 miles.

The So-Called "Alaska Wheat"

The November number of THE SCHOOL JOURNAL published a note about a kind of wheat known as "Alaska," which purported to be far superior to any other kind. A suggestion from a subscriber to the effect that this might be a fake, led to a letter addressed to the Department of Agriculture at Washington. In reply the following note was received from the Department:

A variety of wheat under the name of "Alaska" is being widely advertised as capable of yielding at the rate of 200 bushels to the acre "under ordinary soil conditions" and even better "under extra conditions." It is stated that this variety was found growing wild on the eastern coast of Alaska, and claims of the most extravagant nature are made for it. In consequence of this notoriety the Department is receiving many requests for seed.

This type of wheat has been known for many years, both in this country and in Europe. It has been tried at several State Experiment Stations in the western United States during the past fifteen years, but nowhere have the yields been high enough to merit attention. The wheat has been grown to a very limited extent on certain heavy undrained soils in France for many years. In such locations it is said to yield rather better than ordinary wheat, but as it is one of the poorest wheats known for making flour, it is never grown where ordinary varieties of wheat will thrive.

Volcanic Ash as a Building Material

Consul George H. Scidmore, of Nagasaki, forwards a pamphlet, printed in English, issued by a Japanese company, which describes the use and importance of volcanic ash in combination with Portland cement, especially for construction work in salt water. The advantages claimed for this volcanic ash are that in combination with Portland cement it gives a greater tensile strength than cement mortar alone. It is also claimed that the mortar is denser than cement mortar, and does not permit the percolation of water, thus obviating the injurious action of sea-water salts. This density gives it a superior quality for construction of water reservoirs and re-enforced concrete for the protection of iron from oxidation.

The Consul adds that should the correctness of the Japanese company's claims be proved by trial, it is highly probable that the enormous volcanic resources of the Philippines will provide for a new and profitable industry.

New Russian Steamboat Line

Consul James W. Ragsdale, of St. Petersburg, reports that the Russian Volunteer Fleet has started direct steamship communication between Vladivostok and Chinese and Japanese ports, including Tsuruga, Nagasaki, and Shanghai. Passengers and freight will be transported, the latter including chiefly Siberian butter, Russian raw materials, and tea. In view of the abandonment of sailings to American ports, the former steamers of the Libau-New York line will be used on the line to the Black Sea, where an increase of both passenger and freight traffic is looked for.

Milk and Butter Production of French Cows

Consul Dominic I. Murphy, of Bordeaux, furnishes the following information relative to the dairy productivity of the "Bordelaise," a new breed of cattle developed in the French Department of the Gironde:

The milk of the Bordelaise cows holds middle place in quantity between the Holland and Breton varieties, from which the breed has been developed. While giving somewhat less than the former, the milk is of richer quality, having as great a proportion of butter fat as the Breton, sometimes as high as 41 grams per liter (1.057 quarts), analyses showing the average butter fat in the milk of the Bordelaise to be 36.65 grams per liter, the milk of the Holland cows averaging only 32.66 grams. The average milk production of a Bordelaise cow is from 12 to 15 liters (12.7 to 15.8 quarts) per day.

German Experts Abroad

A report from Consul-General Richard Guenther, at Frankfort, states that Germany now has stationed experts at the following consular posts:

Commercial experts—one at each of these cities: Rio de Janeiro, Shanghai, Calcutta, Johannesburg, Sydney, Yokohama, Buenos Aires, Valparaiso, Constantinople, Chicago; two at New York and two at St. Petersburg; total, 14.

Agricultural experts are attached to the follow-

ing German consulates: Copenhagen, London, Paris, Rome, Chicago, Montreal, and Cape Town; total, 7.

Germany's experience with these experts is highly satisfactory, and this system of promoting her economics will be gradually extended.

Complete Map of Greenland

A complete map of Greenland was published for the first time in a recent number of *Petermann's Mitteilungen*, the great German geographical magazine. It was drawn from surveys made during two years past by Dr. Mylius-Erichsen, who lost his life when returning from his completed work. Says a correspondent of the New York *Sun:*

The trend of the northeast coast is very different from what geographers had supposed. It had been marked on all previous maps as probably extending from about 78° north latitude in a general northwest direction to the Independence Bay of Peary. In fact, it extends for about 300 miles in a northeasterly direction till its most eastern point nearly touches 12° west longitude from Greenwich.

Dr. Mylius-Erichsen started on the steamer *Denmark* from Copenhagen on June 25, 1906, picked up three Greenlanders and a lot of Eskimo dogs that had been sent to the Faroe Islands to meet him, touched at Iceland, pushed for fourteen days thru the ice of the Greenland sea, and reached Koldewey Island on August 13.

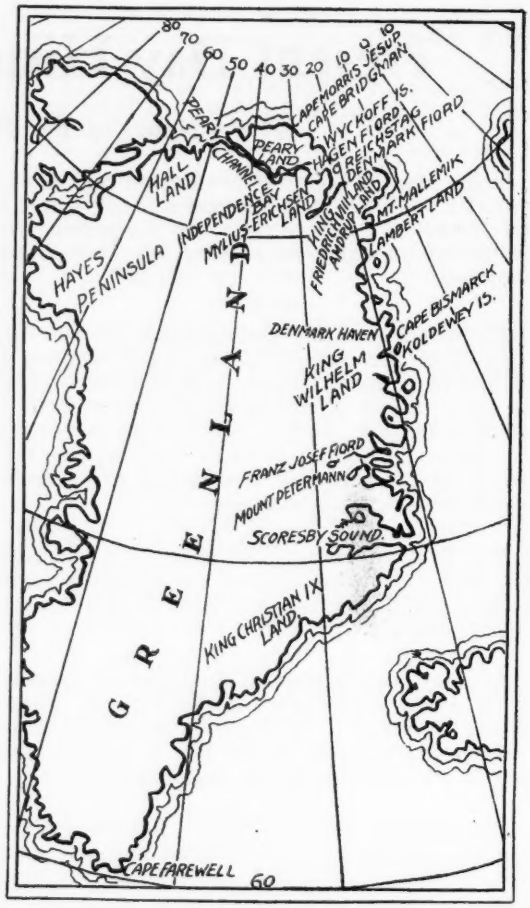
On the next day he had an easy journey in the ice-free coastal waters to Cape Bismarck, and in the inlet behind it he found a suitable place for the winter quarters of his ship. The little harbor was named Denmark Haven. In the late summer he sledged supplies northward to make provision-depots for the long journey of the following spring, and he also surveyed the coasts both north and south of his winter camp as long as daylight lasted.

On March 28 last year the great sledge journey was begun. Mylius-Erichsen, Lieutenant Hagen, and the Greenlander Brönlund were to survey every mile of the coast until their explorations joined those of Peary at Independence Bay. Lieutenant Koch, the artist, Bertelsen, and the Greenlander, Gabrielsen, were to push north of Peary Channel to complete the exploration of the eastern edge of Peary Land, which Peary had explored as far south as Wyckoff Island. Two detachments went along for weeks to carry food for the survey parties. As it left the ship the expedition numbered ten men, ten sledges, and eighty-six dogs.

The lives of the explorer and of two of his companions were really sacrificed to his mistaken notion of the shape of the northern coast of Greenland. Instead of being practically a smooth curve, as he thought, it presents great peninsulas and inlets, so that his food-supply gave out before he could find his way back to his base. His body, together with the notes of his survey, were found later by a search party.

Hagen died on November 15 and Mylius-Erichsen ten days later, when only a few miles from the food cache. Brönlund reached it in the moonlight, and when the spring search party this year found his body there it was evident that he had lived for several days after his arrival, but his strength was too far gone for recuperation.

The bottle containing the survey sheets was found slung around the neck of Brönlund. Perhaps the great result of this exploration would never have been known if it were not for this fortunate circumstance. It is thought that Mylius-Erichsen probably did not venture to carry his diaries and collections over the inland ice with him, but left them in some safe depository at Denmark Fiord, where they may ultimately be recovered.



The Hudson-Fulton Celebration

The great patriotic Hudson-Fulton Celebration, which begins on Sept. 25th, 1909, to commemorate the three hundredth anniversary of the discovery of the Hudson River by Henry Hudson, the English navigator sailing under the Dutch flag for the Dutch East Indian Company, and the one hundredth anniversary of the successful steam navigation of the river by Robert Fulton, will be one of the greatest and most generally educational features for children that New York has ever known.

The Hudson-Fulton Celebration Commission, fully realizing the importance of the event to children, has appointed several committees which will devote their best energies to affording the children of the State of New York and the City of New York the best opportunities to not only enjoy the many features of the celebration, but to derive every possible educational advantage.

One full day, Saturday, Oct. 2d, has been set aside by the commission as a day for children's festivals. Among the plans for the celebration is included a monster pageant, historical and allegorical in nature, which will be a wonderful educational event for the children. The military and naval parades are in the same classification. Fac-

similes of the *Half Moon*, in which Hudson sailed on his memorable voyage of discovery, which resulted in the discovery of the Hudson River and the consequent development of the Empire State of the United States, and of the *Clermont*, in which Robert Fulton made the first successful trip up the Hudson River, under steam power, will be included in the naval parade, and it is safe to say that the sight of these boats will go further towards impressing the history of the exploits of Hudson and Fulton upon the minds of children than all the pictures that they may see in their school books or all the reading matter which they may find in the same books.

The dedication of many monuments and of memorial tablets will also tend to improve and enlarge the minds of children.

In the other brand of educational work, which will precede the actual celebration, plans have been formulated for the institution of a course of special studies on Hudson and Fulton, and their accomplishments and their effects upon history and the development of the country, in the public schools and other educational institutions of the state. The public libraries will also prepare a special list of books for circulation and use in the reading-rooms of the libraries, bearing upon the events to be commemorated by the celebration. Jacob G. Schurman, President of Cornell University, is chairman of the committee which has this work in charge.

Waste of Timber

"We are now cutting timber from the forests of the United States at the rate of 500 feet board measure a year for every man, woman, and child. In Europe they use only 60 board feet." This appalling fact is recorded by Treadwell Cleveland, Jr., in a circular which treats of the conservation of the forests, soil, water, and all the other great natural resources, which has just been published by the United States Forest Service. In speaking further of the consumption of timber in this country, Mr. Cleveland says:

"At this rate, in less than thirty years all our remaining virgin timber will be cut. Meantime, the forests which have been cut over are generally in a bad way for want of care; they will produce only inferior second growth. We are clearly over the verge of a timber famine.

"This is not due to necessity, for the forests are one of the renewable resources. Rightly used, they go on producing crop after crop indefinitely. The countries of Europe know this, and Japan knows it; and their forests are becoming with time not less, but more, productive. We probably still possess sufficient forest land to grow wood enough at home to supply our own needs. If we are not blind, or wilfully wasteful, we may yet preserve our forest independence, and, with it, the fourth of our great industries.

"Present wastes in lumber production are enormous. Take the case of yellow pine, which now heads the list in the volume of annual cut. In 1907 it is estimated that only one-half of all the yellow pine cut during the season was used, and that the other half, amounting to 8,000,000 cords, was wasted. Such waste is typical. Mr. R. A. Long, in his address on 'Forest Conservation' at the Conference of Governors last spring, pointed out that 20 per cent of the yellow pine was simply left in the woods—a waste which represents the timber growing on 300,000 acres.

"The rest of the waste takes place at the mill. Of course, it would never do to speak of the material rejected at the mill as waste unless this material could be turned to use by some better and more thoro form of utilization. But in many cases we know, and in many other cases we have excellent reason to believe, that most, if not all, of this material could be used with profit. It is simply a question of intelligent investigation, and, more than all, of having the will to economize."

Peat as a Fuel

In stating that considerable money has been expended on Dartmoor and the Goss and Tregoss moors in England in attempts to convert peat into a marketable commodity on a large scale, Consul Joseph G. Stephens writes from Plymouth of a present apparently successful invention:

The peat is employed on the moor and its immediate vicinity as fuel, but the various processes hitherto tried with a view to adapting it for use as a fuel in rivalry of coal in the towns, or for putting it to other useful purposes, have hitherto ended in large losses. A new method is, however, being put forward according to a local journal under which, it is claimed, peat may become a very valuable commodity. The inventor is a Swedish scientist (name on file at Bureau of Manufactures) who has been engaged in experiments for years and has now reached the stage when a large factory plant has been put in operation.

The process is very simple. The peat, as obtained from the bog, is first of all pulped into a homogeneous mass. It is then heated under pressure to a temperature above 150° C., after which the water is pressed out by mechanical means. The residue is formed into briquets in the usual way. It is because of the heating of the mass to so high a temperature that the peat ceases to hold water in the same way as at lower temperatures. By mechanical methods it is almost impossible to eliminate water from peat at ordinary temperatures, but by the process named the separation takes place quite easily. As to the comparative value of the peat briquet, it is claimed that 6 pounds will give as much heat as 4 or 5 pounds of good coal. It is said that the manufacture of fuel from peat by this process can be carried on uninterruptedly year in and year out, and that in the matter of price peat fuel would be much cheaper than coal.

Up-to-Date Turkey

The Committee on Union and Progress which represents control in Turkey at the present time has arranged a program supporting the Constitution of 1878. Its principal features are as follows:

1. The Cabinet is to be responsible to the Chamber, and if Ministers fail to obtain majorities in the House they will be bound to resign their portfolios.

2. The number of Senators shall not exceed one-third of the total number of Deputies. Article 62 of the Constitution, whereby all Senators are to be nominated by the Sultan, will be modified, and one-third of the Senators will be nominated by the Sultan and two-thirds chosen by popular election.

3. Every Ottoman citizen over twenty years of age shall have a right to a vote irrespective of any property qualification.

4. An article will be added to the Constitution recognizing the right to form political clubs, provided that their objects are of a constitutional nature.

5. The necessary laws and decrees will be

passed to facilitate the application of the system of decentralization as set forth in Article 108 of the Constitution.

6. The boundaries and administrative divisions of the provinces will be maintained unless the Chamber decides otherwise.

7. Turkish will be the official language of the Empire and the medium of all official discussion and correspondence.

8. The Chamber will be asked to vote an additional article of the Constitution sanctioning the proposal of private bills on the part of not fewer than ten Deputies.

9. All Ottoman subjects possess the same rights and duties without distinction of race or religion. Military service is incumbent on non-Moslems as well as Moslems.

10. Religious freedom is recognized, and the religious privileges granted to the various millets and communities will be maintained intact.

11. The military and naval forces of the Empire will be disposed in accordance with its political and geographical position. A shorter term of military service will be introduced.

12. Article 113 of the Constitution will be modified with the object of obtaining greater security for individual liberty.

13. The relations of employers and workmen will be the subject of new legislation with a view to obviating strikes and labor disputes.

14. The landless peasantry will be assisted to become proprietors—not, however, at the expense of present landowners.

15. Improvements will be adopted in the system of the collection of the revenue.

16. Education will be free.

17. All schools will be subject to inspection by the Ministry of Education. Government schools will be established, which shall be open to all without distinction of religion or race. Turkish will be a compulsory subject in all primary schools.

18 and 19. These deal with measures which are to be proposed for the encouragement of agriculture and commerce.

20. Ottoman subjects possessing the necessary qualifications may be elected Deputies for any division of the Empire instead of being only eligible as representatives of the districts in which they reside.

Panama Hats

Straw hats, made from the finely plaited leaves of a pine tree of South and Central America, are called Panamas. These hats are much prized in the tropics on account of their lightness, durability, and flexibility. They are not spoiled by rain, the freshness of their color being easily reproduced by the application of soap and water. The plaiting of the straw is a very tedious and difficult process, and consequently good Panama hats are sold at high prices. The principal supplies are obtained from Ecuador and Colombia in South America. There is now an extensive trade done in imitation Panama hats.

The Year's Crops

The Bureau of Statistics of the United States Department of Agriculture has made preliminary estimates of the production of the principal crops of the United States, a summary of which, with comparisons, is as follows, actual figures for 1907 being given:

The above crops, which represent approximately 70 per cent of the value of all farm crops, are this year in the aggregate about 3 per cent greater than in 1907, and 2.4 per cent greater than the average of the preceding five years.

		Production (000 omitted)				Quality	
		1908	1907	Av. 5 yrs.	1908	1907	Av.
Corn	Bushels	2,642,687	2,592,320	2,574,143	86.9	82.8	84.3
Winter wheat	"	425,940	409,442	413,188	90.1	90.5	....
Spring wheat	"	234,080	224,645	244,517	88.2	88.8	85.9
Total wheat	"	660,020	634,087	657,705	89.4	89.9	....
Oats	"	789,161	754,443	916,931	81.3	77.0	86.1
Barley	"	167,482	153,597	144,426	89.3	88.2	87.6
Rye	"	30,921	31,566	30,419	92.7	91.6	91.2
Buckwheat	"	15,648	14,290	14,602	90.7	87.3	89.9
Flaxseed	"	25,717	25,851	26,808	91.4	89.7	90.8
Rice (rough)	"	22,718	18,738	.....	88.4	....	....
Potatoes	"	274,660	297,942	286,674	87.6	88.3	87.6
Hay	Tons	67,743	63,677	59,907	94.5	90.5	91.0
Tobacco	Pounds	629,634	698,126	722,744	87.9	90.0	85.8

Statistical data relating to other crops on November 1, including comparisons with 1906 and 1907, are as follows:

Crops, and nature of data.	1908	1907	1906
Apples, production, per cent	43.4	32.1	69.1
Grapes, " "	82.2	78.4	83.3
Pears, " "	73.3	44.3	74.3
Cranberries, " "	55.4	78.2	84.8
Peanuts, " "	82.6	83.4	80.3
Oranges, condition, "	88.9	84.6	85.3
Lemons, " "	92.9	93.3	85.0
Sugar beets, " "	86.0	90.4	95.5
Sugar cane, " "	90.8	91.1	79.7
Sorghum, yield per acre, gallon	90.4	90.8	95.7
Sweet potatoes, yield per acre, bushel	92.3	87.5	90.4
Sweet potatoes, quality per acre	89.5	85.7	87.4
Oats, average weight, measured bushel	29.8	29.4	32.0

Making Newspaper Reading Profitable

By ANNA GILLINGHAM, for Two Years a Teacher of Mathematics in the Ethical Culture School, New York

Miss Gillingham has been giving to readers of THE SCHOOL JOURNAL a series of articles on making mathematics a live interest. It was in connection with her teaching of arithmetic that she met with the interesting experiences she describes here.—EDITOR.

It is a time of genuine anxiety for thoughtful parents and teachers when children begin to read the daily newspapers. They come into school in the morning and announce with pride in their advancing age that they read the paper nearly thru almost every day now. We dare not do other than rejoice with the future citizens who are becoming introduced to the instrument of free thought and expression of the country in whose affairs they are to take an active part.

Theoretically the newspaper is the channel thru which intelligence of the thoughts and actions, failures and achievements of their fellow-citizens must reach them. But to the youthful reader, the modern press presents such a bewildering mass of material that there is grave danger of his being overwhelmed before his intellectual or moral habits are at all established.

The newspaper habit is fraught with danger for the man or woman, whose mature discrimination is often severely taxed to select the really valuable news items or those columns telling of the progress of human thought along important lines. In the case of the child it frequently happens that there is nothing in his knowledge or experience to enable him to assimilate such articles sufficiently to gain any advantage from them.

With these dangers in mind any work seems worth while which will fortify children with facts or habits of thought outside the technical school routine and prepare them to take an intelligent interest in the better newspaper paragraphs. Nothing but conscious preparation can give such articles a meaning and force sufficient to catch the eye and hold the attention. Such preparation devolves largely upon English and history departments, current event exercises and so forth, but the mathematics teachers can help.

Most persons have the habit of omitting statistics and recorded figures as being dry and unimportant, impossible for them to remember, not realizing that, wisely interpreted, such statements often convey pertinent information in more striking form than it could otherwise be given. I have sometimes been impressed by the intelligent interest manifested in such printed statistics by certain classes of children who had learned to regard numbers not as dead figures to be skipped, but as symbols for expressing live and important thoughts.

In this connection I have occasionally been much pleased over the newspaper clippings brought me with pride and assurance that I will like to share them. It is not always necessary in such cases to proceed to rack our brains to twist the printed figures till we can elaborate problems to be worked. Sometimes it is the best possible use to make of a few minutes of the mathematics recitation period to just read aloud the clipping and help the class to form a reasonable conception of the significance of the message expressed tersely in the collated figures.

After a certain class had studied about dairying as an industry, and had been told a little of the dangers of impure milk, or that from diseased cows, they were taken to visit a dairy farm. They saw the extreme measures taken to ensure the absolute purity of the milk, and discussed the advantages of this care, after the vague manner of healthy children who know little of sickness, but are told that certain things "aren't good for them."

A few days later the following clipping was brought in, and on being slowly read and discussed, seemed to make a more profound impression than had all the array of sterilized bottles and germ-proof covers. They had never before been confronted so forcibly until the very clear and definite way in which figures can on occasion point their lesson.

Rochester, by its pure milk stations, has reduced the number of deaths of babies in July and August from 1638, during the eight years 1888 to 1896, to 761 during the same months of the eight years following 1897 to 1905, tho the population had grown over fifty thousand.

This is an average reduction yearly of about 108 deaths. In other words, Rochester has in these hot months saved almost two babies a day by providing pure milk and improving its general milk supply.

In Philadelphia even better work has been done. The reduction in the number of deaths in the last year of babies was 394.

On another occasion I had been telling the class of the construction of a reinforced concrete building in which I was interested. Several children knew of similar buildings, and we spoke of their advantages and of the probability of their increase in number, and of their perhaps growing more reasonable in price.

We also talked of the different kinds of pavements in the laying of which crushed stone and concrete are used, and looked up some figures concerning the cost of these.

The following clipping, whose origin I likewise do not know, was brought in shortly after. The article is much longer. I quote only the part in which there seems an opportunity for some widening of the children's quantitative horizon. If no other point was gained, it was certainly an advantage to have their interest in that side of the subject awakened to a degree sufficient for this to arrest their attention in the newspaper column.

CONCRETE AND CRUSHED ROCK

The important effect which the growing use of concrete is having upon certain allied interests is shown by the fact that the sanitary director of Chicago has been negotiating for the sale of the enormous quantities of rock which were excavated during the construction of the Chicago drainage canal. This rock at present lies in huge banks, which extend for many miles parallel with the canal between Lockport and Lemont, Ill. The estimated amount of material suitable for crushed rock now lying in these spoil banks is 22,000,000 cubic yards, and the whole of it, of course, lies conveniently for transportation thru the canal to Chicago. An offer of 10½ cents per cubic yard has been made for the rock as it lies in place, with the return of a certain percentage of the net profits from the sale of the rock after it has been crushed.

Notes of New Books

"Catchwords of Friendship" is a collection of two hundred sentiments in verse and prose, on friendship. The quotations are gathered from all quarters and the choice is excellent. (A. C. McClurg & Co., Chicago, publishers.)

The Standard Domestic Science Cook Book marks a new advance in the culinary art. It covers the entire field of domestic science. There are more than fourteen hundred tried recipes, many of them entirely new and appearing for the first time in any book. The work is divided into thirty-two departments and contains 135 engravings and 16 full-page plates in color. The language in which the recipes are worded is plain and easily intelligible. Price, Gift Edition, $2.50. Washable edition, $1.75. (Laird & Lee, publishers, Chicago.)

The appearance of W. H. PHYFE'S "12,000 Words Often Mispronounced" will be welcomed by all familiar with the author's "10,000 Words Often Mispronounced." The present volume is in fact a revised and enlarged edition of the earlier work. It is a most convenient reference book on this subject. It is authoritative in its decision, admirable in its arrangement, and clear in its marking. It is a volume which neither the scholar nor the ordinary man can afford to do without. (G. P. Putnam's Sons, New York, publishers. Price, $1.25 net.)

"The Sandman: His Sea Stories," is a first-rate book for small boys. The stories, all of them about the brig "Industry," are independent of one another, and each is just about long enough to be read after a small boy is in bed and before mother has to give him a last good-night kiss and go downstairs. They are sufficiently exciting to hold the lad's interest, yet not of such a character that he will be frightened so he cannot go to sleep. They are just nice breezy yarns, good for a boy to have. (L. C. Page & Co., publishers, Boston.)

SENATOR ALBERT J. BEVERIDGE'S new book, "Americans of To-day and To-morrow," will interest all loyal Americans. Mr. Beveridge believes that our future welfare depends largely on the cultivation of conservatism, thoroness and continued adherence to the loftiest standards of national righteousness. Henry Altemus & Company, Philadelphia. Price, 50 cents.

"The Tortoise and the Geese" is the title of a collection of Oriental fables retold, by MAUDE BARROWS DUTTON, in a most alluring way for modern young folks. The type is large and clear and the illustrations are clever and interesting. (Houghton, Mifflin & Co. Price, $1.00.)

For several years past Mrs. Francis Hogdson Burnett has written for the Christmas market a nice little fairy story. The children, especially little girls who have enjoyed "The Racketty Packetty House," "Winnie and the Rook," and last year's "Cosy Lion," will be delighted to welcome "The Spring House Cleaning" as told by "Queen Crosspatch." The book is of the same size and binding as those of previous years. The story is delightful, and the illustrations in color by Harrison Cady add much to the fun of it all. (The Century Company, New York.)

"Our Little Australian Cousin" is the latest addition to the famous "Little Cousin" series. The author is MARY F. NIXON-ROULET, and the book is illustrated by Diana W. Horne. Teachers who are familiar with this series of books of child life in different countries need only be told that a book on Australia has been issued, to write for it at once. The volume is quite up to the standard of its predecessors and the little Scotch folk who emigrated to Australia will find a hearty welcome awaiting them in many a schoolroom and home. (Price, 60 cents. L. C. Page & Co., publishers, Boston.)

NOTABLE BOOKS

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Each year, for several seasons past, the publishers of Louisa M. Alcott's books have brought out one or more of the dear old stories in new dress. This year the "Spinning Wheel Stories" and "Proverb Stories" have been published in type and binding similar to the previous volumes, and enclosed in a pasteboard box. No readers of THE SCHOOL JOURNAL need to be told what the stories are,—we were all brought up on them from our childhood. Suffice it to say that no better present could be given a boy or girl than these delightful books. (Little, Brown & Co., publishers, Boston.)

"Carlota, A Story of the San Gabriel Mission," is a tale of Spanish life in Southern California. The author, FRANCES MARGARET FOX, evidently understands her subject and the interests of children. The tale leads up to the charming story of the first American flag made in California, and the book will be most helpful in connection with the study of geography and civics with the younger pupils. The type is specially large and the book is suited for supplementary reading, as well as serving as an appropriate gift book. (L. C. Page & Co., publishers, Boston.)

"Famous Cavalry Leaders—Through the Ages with the Heroes of Sabre, Spear and Saddle," by CHARLES H. L. Johnston. The author has collected stories of "the forced marches, dashing raids, and glorious charges" of such commanders as Attila, Saladin, Chevalier Bayard, Gustavus Adolphus, Francis Marion, Marshal Ney, Jeb Stuart, Phil Sheridan, Custer, and others. The portraits are full-page photo engravings of most of the generals.

The author's intention that the book shall appeal to the average boy is manifested in the dedication—to "St. Mark's Scholars." Each subject is treated naturally, in a manner to appeal to the enthusiasm of young readers. Attila is described as "God's Scourge," Ghenghis Khan as "The Perfect Warrior," Bayard as "Sans peur et sans reproche," Marion as "The Swamp Fox," Stuart as "Cavalier," and Sheridan as "The Daredevil." The chapters average about thirty pages each; the literary style is excellent; the subjects are well chosen. The chief criticism would attach to the printer's use of punctuation marks,—semicolons being used for commas and commas where no marks should appear. As a biographical supplement to general history it will readily find its place. (8vo. Cloth. 436 pp. 24 Illustrations. L. C. Page & Co., publishers, Boston.)

For a clean, wholesome, interesting, natural schoolboy story it would not be easy to surpass "The New Boy," by ARTHUR STANWOOD PIER. It will appeal to all young lovers of baseball, football, and other sports, and should be one of the most popular of the year's books for boys. (Houghton, Mifflin Co., Boston. Price, $1.50.)

A new edition of More's "Utopia," rendered into modern English by Valerian Paget, has recently been published. The "Utopia" is one of the great classics of English literature,—great not only for its literary quality, but also for the thought that is in it,—which is as living and pertinent to-day as it was on first publication four hundred years ago. And yet, because for some inexplicable reason it has not been the habit to present it in modern language, as in the case of all other great classics of equal standing, such as "Pilgrim's Progress," "Gulliver's Travels," etc., it has of necessity become merely a name to the masses of intelligent general readers of the day. This edition deserves a place, not only in the libraries, but in the minds, of modern readers. (The John McBride Co., New York, publishers.)

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At the suggestion of the great Shakespeare scholar, William J. Rolfe, an old book of "Shakespeare Proverbs," originally issued in 1847, has been republished. Of the compiler, MARY COWDEN-CLARKE, Mr. Rolfe gives an entertaining sketch. A portrait of Mrs. Clarke taken by a friend in England serves as a frontispiece. Someone has said that the best of Shakespeare's plays is that they are so full of quotations. They are certainly full of aphorisms—how many and how complete in themselves, Mrs. Clarke's collection reveals.

The book is a "red-line edition," and is suitable for a gift. (G. P. Putnam's Sons, New York, publishers.)

"A History of the English Agricultural Labourer," by DR. W. HASBACH, Professor of Political Economy in the University of Kiel. Translated by RUTH KENYON, with preface by SYDNEY WEBB. For the study of agricultural questions, whether arising in England, on the Continent, or in America, this book, showing minute investigation, forms an important basis. It is published under the auspices of the London School of Economics.

Existing conditions in England materially differ from those familiar to the farmhand in the United States. In the preface Sydney Webb says, "Small farmers using superior intelligence and special personal attention to grow exceptional crops under intensive culture may not improbably combine with agriculture some such independent profession as literature or an artistic handicraft."

Mr. Hasbach advocates liberty and private ownership, as conducive to the improvement of the English agricultural laborer. He believes that protectionists will wisely press for an increase of the class of peasant landholders in England (19th century yeomen), with whom, had there been a larger number, free trade would have been impossible. (1 vol., cloth, 8vo. 486 pp. Price, $2.50. P. S. King & Son, publishers, London.) H. B. B.

"Spanish Reader," by CHARLES ALFRED TURRELL, Professor of Modern Languages, University of Arizona. Beginners in Spanish will find in this reader all the necessary help, even tho they are unfamiliar with any other language than English. For first reading, use has been made of a few clippings from newspapers and other sources, as well as of some paraphrases of the fables in verse of Samaniego. With these exceptions the selections are from the works of the best and most popular writers of modern times. (Cloth, 16mo, 256 pages, with Vocabulary. Price, 80 cents. American Book Company, New York.)

"Lyman's Plane and Solid Geometry," by ELMER A. LYMAN, professor of mathematics, Michigan State Normal College, is planned to have the student rely on his reasoning powers rather than on his memory. Problems of construction, with practical applications, are introduced early in the work. (Half leather, 12mo, 340 pages. Price, $1.25. American Book Company, New York, Cincinnati and Chicago.)

"Macbeth" and "Henry the Fifth," just issued in the "New Hudson Shakespeare," confirm the favorable impression created by the earlier volumes. The wise revision of Dr. Hudson's edition of the plays, by E. CHARLTON BLACK and ANDREW J. GEORGE, have made available for school use the remarkably illuminating notes of that famous scholar. The edition promises to become a leader for textbook use in schools and colleges. It is in every way admirable. The introductions and notes are worthy of the highest commendation, and the arrangement and appearance of the volumes leave nothing to be desired. (Ginn & Company, Boston, publishers. List price, 50 cents; mailing price, 55 cents.)

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The eyes of the world are turned upon our land to-day as upon no other, and our history is therefore of greater interest than ever before. A mere recital of facts, without historic criticism, without reference to undercurrents that move society, is no longer acceptable in this age of thinking readers. DR. HENRY WILLIAM ELSON, in a new and enlarged subscription edition of his "History of the United States," has written a history in brief compass that falls between the elaborate works, which are beyond the reach of most busy people, and the condensed school histories, which are devoid of all literary style through the necessity of crowding so many facts into small space. The illustrations, selected by Mr. Charles Henry Hart, the recognized authority in historical portraiture in America, have a stamp of authenticity which has not before been put upon any popular illustrated history of our country. (Five volumes. Illustrated. $7.50 per set. The Macmillan Company, New York).

"The Book of the Little Past," by JOSEPHINE PRESTON PEABODY, is an enlarged edition of "The Singing Leaves," by the same author, published in 1903, and consists of poems of child life, many of them new, and others reprinted from *Harper's Magazine* on large paper with large type and appropriate illustrations, forming a beautiful book suitable for gift purposes. It will be a pleasure to all children who receive it, and is eminently creditable to both publisher and author as a piece of book-making. With decorative color illustrations. Price, $1.50. (Houghton, Mifflin & Company, publishers.)

"The Divine and Moral Songs for Children," by ISAAC WATTS, famous since our grandfather's day for his hymns, have been collected in book form, with lovely pictures in color by MRS. ARTHUR GASKIN. To one not familiar with these quaint poems, the book will prove of interest, and whether children enjoy the moral of the poems or not, they are sure to appreciate the pictures. (L. C. Page & Co., Boston, publishers.)

Carpenter's "How the World Is Clothed," by FRANK GEORGE CARPENTER, is the second of a series of readers on commerce and industry, and takes the children in a personally conducted tour around the world to investigate the sources of their clothing. The book takes up not only the production of the raw material, but also its transportation and the processes of its manufacture. It is valuable, not only for teaching the children about the industries described, but also in giving them a live geographical knowledge which cannot be imparted by the ordinary textbook. (Cloth, 12mo, 340 pages, with illustrations. Price, 60 cents. American Book Company, New York, publishers.)

The "Punctuation Primer," the preparation of manuscript, by FRANCES M. PERRY, Associate Professor of Rhetoric and Composition in Wellesley College, treats first of the terminal punctuation of sentences, and then of the punctuation of elements within sentences, as well as of paragraphing, quotations, capitalization, compound words, word divisions, the preparation and correction of manuscript, the correction of themes, and several other related topics of importance. The book will prove useful not only in colleges and high schools, but also to stenographers and business men. (Cloth, 16mo, 103 pages. Price, 30 cents. American Book Company, New York.)

"Pride and Prejudice," by JANE AUSTEN. Edited by JOSEPHINE WOODBURY HEERMANS, A.M. This edition of Miss Austen's book is printed in Macmillan's pocket series of English Classics. (Price, 25 cents.) Our only criticism would be that the type is crowded and rather small for the eye, but the price is reasonable and the book is a commendable addition to the series, and with its critical introduction and notes, is suited for use in elementary and secondary schools. (One volume, 32mo. 364 pp. Macmillan Co., pulishers, New York.)

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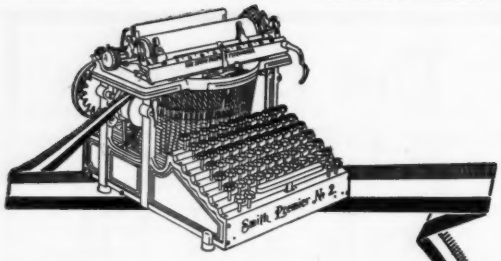

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Winter

Old Winter is a sturdy one,
And lasting stuff he's made of;
His flesh is firm as ironstone;
There's nothing he's afraid of.

He spreads his coat upon the heath.
Nor yet to warm he lingers;
He scouts the thought of aching teeth,
Or chilblains on his fingers.

Of flowers that bloom or birds that sing
Full little cares or knows he;
He hates the fire and hates the spring,
And all that's warm and cozy.

But when the foxes bark aloud
On frozen lake and river;
When round the fire the people crowd,
And rub their hands and shiver;

When frost is splitting stone and wall,
And trees come crashing after,—
That hates he not; he loves it all;
Then bursts he out in laughter.

His home is by the north pole's strand,
Where earth and sea are frozen;
His summer-house, we understand,
In Switzerland he's chosen.

Now from the North he's hither hied
To show his strength and power;
And when he comes we stand aside,
And look at him and cower.

—*From The German.*

Digging

He wanted a job, and like everyone else,
He wanted a good one, you know,
Where his clothes would not soil and his hands would keep clean,
And the salary mustn't be low.
He asked for a pen, but they gave him a spade
And he half turned away with a shrug,
But he altered his mind, and, seizing the spade,—
He dug.

He worked with a will that is bound to succeed,
And the months and the years went along,
The way it was rough and the labor was hard,
But his heart he kept filled with a song;
Some jeered him and sneered at the task, but he
Plugged just as hard as he ever could plug;
Their words never seemed to disturb him a bit—
And he dug.

The day came at last when they called for the spade
And gave him a pen in its place.
The joy of achievement was sweet to his taste
And victory shone in his face.
We can't always get what we hope for at first—
Success cuts many queer jigs,
But one thing is sure—a man will succeed—
If he digs.

—*Inglenook.*

We Should Smile

The thing that goes the farthest toward making life worth while,
That costs the least and does the most, is just a pleasant smile—
The smile that bubbles from the heart that loves its fellow-men
Will drive away the cloud of gloom and coax the sun again.
It's full of worth and goodness, too, with manly kindness blent;
It's worth a million dollars and does'nt cost a cent.

There is no room for sadness when we see a cheery smile.
It always has the same good look—it's never out of style;
It nerves us on to try again when failure makes us blue—
Such dimples of encouragement are good for me and you.
So smile away; folks understand what by a smile is meant—
It's worth a million dollars and doesn't cost a cent.

—*The Nebraska Teacher.*

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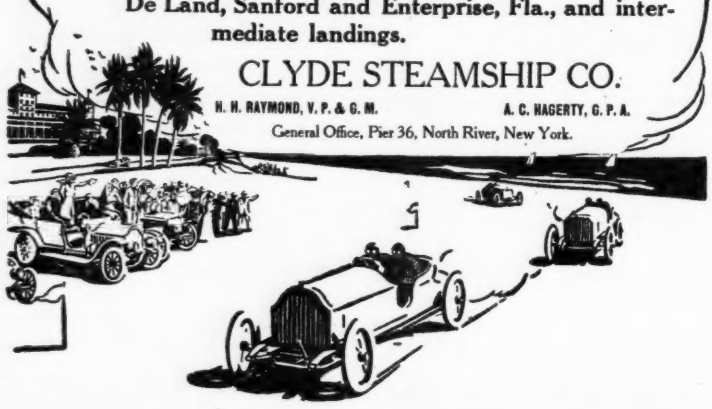

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Mr. E. W. Beard, of Des Moines, Iowa, is the oldest school teacher in his State. Mr. Beard has taught continuously for fifty-two years, and in that time has never missed a single winter term. He is seventy-three years old and expects to teach this winter. All of his teaching has been done in Iowa.

The Frances Willard School at Philadelphia, of which John L. Shroy is principal, has started a school paper. It is known as "The Willard School Record," and the first number appeared in October. An interesting feature is the publication each month of the names of all pupils who were present every school day of the preceding month.

Mr. Edward F. C. Young, president of the Joseph Dixon Crucible Company, and the most prominent financier in the state of New Jersey, died at his home in Jersey City on December 6. Death was caused by cancer. Mr. Young had been a more or less sick man for the past three years.

Schools for Vocational Work

In the debate on the round table on evening school work in connection with the second annual convention of the National Society for the Promotion of Industrial Education held recently at Atlanta, Louis Rouillion, Director of the educational work of the Mechanics' Institute of New York, stated that training at night schools was the most practical form of trade teaching. He said in part:

"In Great Britain the evening vocational schools are wielding so large an influence that all attempts at day training are almost eclipsed. In this country by far the larger amount of real vocational training that is definite and effective is being done in the evening schools. The reason is not far to seek.

"The evening school does not interfere with the pupil's present earning capacity, nor with his hours of labor. It only asks for some of the time that would otherwise be lost in idleness or in the pursuit of amusement. In vocational training the evening school has a decided advantage in that it does not have to force or urge a boy to select this or that trade, but finds him already employed as a plumber, a mason, or a carpenter, with his ambition aroused to excel in his trade. The mere fact that a lad elects to attend an evening school puts him in the select class of the actively ambitious. This is one reason why the tone of the evening trade schools and mechanics' institutes is pitched to a higher and truer key than obtains in similar day school work. The earnestness and intensity of purpose of these students is a well-attested fact.

"There is heard much talk about the self-sacrifice and hardships in a boy attending evening school after eight hours' labor at his trade. Any one who has had to do with evening school work knows how misplaced is such sympathy. The school work is seldom a burden to the student, in most cases it is a real pleasure, as attest the faces of these students at their school work. This actual joy in their work is frequently reflected in the attitude and feelings of the teacher. The reaction upon him is not one of exhausting his nervous vitality, but quite the contrary.

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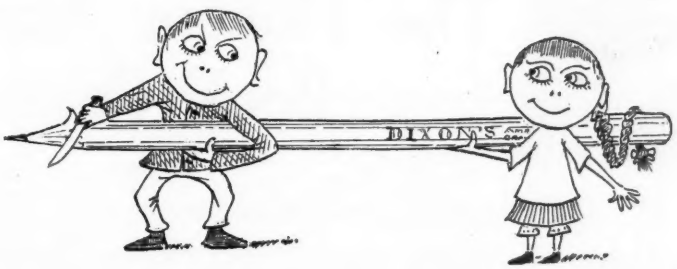

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Meeting of Doctors of Pedagogy

At the meeting of the Society of the Doctors of Pedagogy, held on November 12th, the question discussed was, "What Is Wrong with Our Schools?" The speakers were Dean Thomas M. Balliet, of the School of Pedagogy, and Dr. Joseph S. Taylor, District Superintendent of Schools, Manhattan and the Bronx.

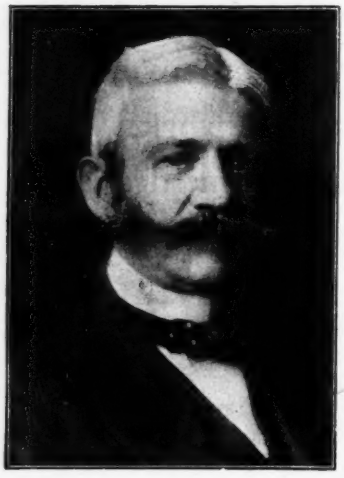
The following officers were re-elected and re-appointed for the year 1908-9: President, Dr. Gertrude Edmund, Principal of Training School for Teachers, Lowell, Mass.; Vice-President, Dr. Francis H. Paul, Public School Principal, Manhattan; Secretary and Treasurer, Dr. Harmale De Milt Jackson. Executive Committee: Dr. John Dwyer, District Superintendent, Manhattan; Dr. Lizzie Rector, Principal of Public School, Manhattan; Dr. E. W. Stitt, District Superintendent, Manhattan.

The annual luncheon, which was held at the St. Regis Hotel last May, was an unusually successful gathering of doctors and masters of pedagogy, with such after-dinner speakers as Chancellor Henry M. MacCracken, Mr. Ossian Lang, Dr. Charles H. Parkhurst, Prof. Charles Zueblin and Superintendent Andrew Edson.

The membership of the Doctors of Pedagogy includes district superintendents, supervisor of kindergartens (N. Y. City), superintendents of schools, professors in colleges, principals of state normal and city training schools, instructors in normal, training and high schools and principals of some of the largest schools in Greater New York. The society is one of the most distinguished public school associations in America.

Schools for Tuberculous Children

NEW YORK, Dec. 3.—As a result of the great campaign against tuberculosis now being carried on thruout the world, many of the public schools in the United States are taking a new departure in teaching to the children



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the nature, causes, dangers and prevention of consumption. A text-book entitled "Simple Lessons on Tuberculosis or Consumption" has just been placed in the seventh and eighth grades of the District of Columbia. The Massachusetts educational authorities, acting under a law of the Legislature of 1908, are establishing courses of instruction on tuberculosis in all of the schools of the State. In addition to these public movements many of the private organizations thruout the country have established, and are establishing, open-air schools for consumptive children, it being estimated that about two per cent. of the pupils in the larger city schools have tuberculosis.

The first public school for consumptive and pre-consumptive children to be established in the United States was opened in Providence, R. I., last January. The sessions were held entirely in the open, and the benefits of the fresh-air treatment were combined with the teaching and training of the public schools.

This experiment led to other movements, both public and private. The Brookline Anti-Tuberculosis Society opened a school for tuberculous children in July which is still successfully conducted. In Boston a school for consumptives was opened under private auspices in July, it being the intention to keep it open for the summer months only, but so successful were the results of this work that the city school authorities recently decided to take over the work and set aside a permanent building for this purpose. In Pittsburg a similar school was opened in September, and the marked benefits which the children have already received from this training have led to its enlargement. The Board of Education of New York City has granted a teacher to the Bellevue Hospital Day Camp for the purpose of conducting a school there, and a consumptive teacher has been secured to teach the consumptive children. This school will be conducted on the deck of an old ferryboat. In all of these schools the children are kept in the open air all day long. Most of the buildings used are opened on three sides and are so constructed as to furnish unlimited supplies of fresh air without draughts. Desks, blackboards and other paraphernalia are provided in these schools just the same as in the regular institutions. The children study and recite in the open air, even during the coldest weather, and the percentage of colds among them is far smaller than among children in the public schools. In most of these fresh-air schools soapstones are provided for keeping the feet warm in cold weather.

In addition to these specially conducted schools several of the States have required that the important facts about tuberculosis be taught in the lower grades of the public institutions. Michigan was the first State to adopt measures of this kind. By an act of 1895, the public schools are required to give instruction on the nature of tuberculosis and other infectious diseases. In New Jersey progressive steps are being taken by teaching the children in the schools a set of aphorisms on consumption. In Massachusetts a section on the nature, dangers and prevention of consumption is being inserted in all of the physiologies.

In the District of Columbia a special text-book has been provided in which instruction is given concerning sleeping in the open air, the dangers of spitting, the way to prevent consump-

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tion, and other kindred topics. Dallas, Tex., is the latest city to adopt the method of teaching children about consumption in the schools, and within a few days a "Tuberculosis Primer" will be in the hands of every pupil in the public schools. In North Carolina a separate section on tuberculosis, placed in all the physiologies, is taught to all of the children.

Gold Medal and Cash Awards

Isaac Pitman & Sons, of New York, are offering the *Pitman Journal* Championship Trophy (value $175) for competition at Providence, R. I., on Saturday, April 10 next, in connection with the annual meeting of the Eastern Commercial Teachers' Association, when the Eagan International Cup (open to all shorthand writers, and now held by an Isaac Pitman writer), and the Miner Gold Medal (open to all writers of less than ten years' experience), will be competed for.

The trophy, which is of gold and weighs four and one-half ounces, is given for the purpose of arousing enthusiasm and emulation among writers of Isaac Pitman Shorthand, and must be won three times consecutively before it can be retained permanently. The competition is open to writers of the Isaac Pitman system who have commenced the study within the limits of North America, and there is no limit to age, sex or color. This medal will not be awarded unless the gross speed exceeds 160 words per minute, and the net speed 150. Candidates must enter their names with Isaac Pitman & Sons, 31 Union Square, New York City, before the date of the Providence meeting. The present holder of the medal is Miss Nellie M. Wood, of West Somerville, Mass.

In addition to the *Pitman's Journal* Trophy, Messrs. Isaac Pitman & Sons also offer a cash award of $350 to any writer of the Isaac Pitman Shorthand who may be successful in winning the Eagan International Cup, also a cash award of $175 to any writer of the Isaac Pitman Shorthand winning the Miner Gold Medal. This offer is open to all Isaac Pitman writers, American or otherwise.

The mischievous boy of the family had taught his gray Parrot to repeat many short but startling phrases, among the rest to holler "Fire! Help!" when the boy played with his toy fire-engine indoors.

Late one afternoon the silence was broken by shrill cries of "Fire! Help!", etc., but the members of the household, supposing the noise came from "that parrot broke loose again," paid no attention to the outcries until the alarm was rung in and engines came and flooded the basement, from which smoke was pouring, and two plucky firemen rescued the gasping cook, who was nearly suffocated in her vain efforts to put out the fire, while calling for help.

When the family tried to explain that they thought the cries came from the parrot, and the cook had owned up that she was polishing the stove with a fluid stove blacking, the man of the house remarked vigorously: "Hereafter, either kill that parrot, or use X-Ray Stove Polish—the best and safest fireproof stove polish ever made."

Some Small Sweet Way

There's never a rose in all the world
But makes some green spray sweeter,
There's never a wind in all the sky
But makes some bird-wing fleeter;
There's never a star but brings to have
Some silver radiance tender;
And never a rosy cloud but helps
To crown the sunset splendor;
No robin but may thrill some heart
His dawn-like gladness voicing.
God gives us all some small sweet way
To set the world rejoicing.

—*American Primary Teacher.*

Brown's Troches has been offered to the public for more than fifty years, and is considered the best article manufactured for the use of Public Speakers, Teachers and all those who are obliged to use their voice to a great extent. The unsolicited recommendations from prominent speakers, etc., prove their great value. It is furthermore a convenient and effective remedy for Coughs, Hoarseness and Throat Troubles and entirely free from harmful ingredients. We can cheerfully recommend them to our readers.

Janus

The poet makes January say: "Janus am I, oldest of potentates." Why not make this month say: Patron am I of Rheumatism, which I make more painful; of Catarrh, which I make more annoying; of Scrofula, which I develop with all its sores, inflammations and eruptions?

Hood's Sarsaparilla can be relied upon to cure these diseases, radically and permanently, and so there is no good excuse for suffering from them.

In times of depression it has always been found true that every individual, as well as every municipality, must exert the greatest influence toward reducing expenditures.

The claim was made a year ago, at this time, by the Holden Book Cover Company of Springfield, Mass., that their business would show an increase in the face of the depression and panic, which involved the whole commercial world.

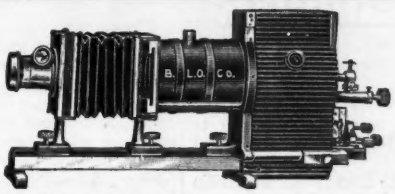
Mr. Holden reports that, at the end of December, 1908, he has been able to show a larger business in all departments than in previous years, and with the brightest prospects for 1909.

The Holden Book Covers have been well and severely tested in all climates and under many difficult conditions, and, in every case, have always stood up and substantiated the claims made for them.

It is readily to be seen that Book Covers are not a luxury to the schools, but a necessity, especially as the Holden Company have consistently maintained one price to every city and town, thus contenting themselves with a very small margin of profit. They have been rewarded by seeing their business grow from year to year.

The little mending devices, which they classify under Quick Repairing Materials, are well known to thousands of School Boards, who supply an outfit for each teacher's desk, so that instant repairs can be made.

It is bringing back to life again the old proverb, "A stitch in time saves nine."



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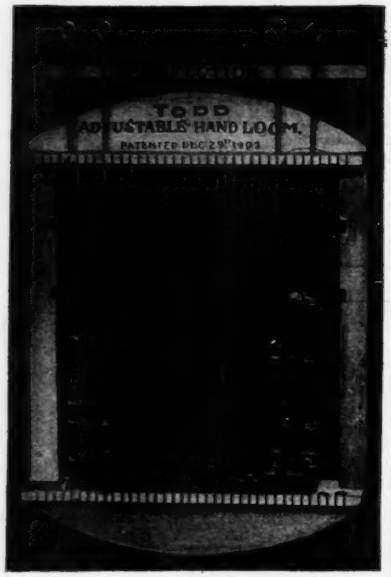

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Progress

Those who can recall the laboratories of twenty and twenty-five years ago will remember how rare was the microscope, especially for the use of individual students. Not only microscopes, but other scientific instruments such as microtomes, projection apparatus, etc., were unknown in the majority of small schools. The progress has been gradual, and we have become accustomed to modern equipment without realizing the extent which the development has reached.

We are forcibly reminded of this progress by the information given in a recent publication—"A Few Facts and Figures"—issued by the Bausch & Lomb Optical Co., of Rochester, N. Y. The development of this scientific establishment since its foundation is an index to the growing demands which science makes upon the producers of reliable apparatus. In 1853 the company had no employees and occupied but a few feet of space. Today ten acres of floor space is utilized by 1,800 employees.

This one concern has supplied over 66,000 compound microscopes besides a great many dissecting stands, quantities of hand magnifiers, etc. One interesting item is 20,000 oil immersion objectives for the microscope. These were introduced only a few years ago. 5,500 precise microtomes have been made besides numerous photo-micrographic and projection equipments. Other departments have been added from time to time, including precision glassware made in their own factory in Germany, the original Ganong Apparatus for the study of plant physiology, etc. Twenty-five million eyeglass lenses are produced annually.

But this is not the most important feature. Of greater importance has been the reduction of the cost of equipment to schools, while at the same time the quality and efficiency of the various instruments have been wonderfully bettered. This has been accomplished thru the employment of highly modernized technical equipment and the research work of a competent and experienced scientific staff. The alliance with the Carl Zeiss Optical works of Jena, announced a year ago in the booklet called "A Triple Alliance in Optics," assures even better things for the future.

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